Gleanings in Bee Culture

Created to help beekeepers succeed

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100 Percent Wintering for Ten Years in Mass.

By Omer A. Colley, Bronz, New York

When I started keeping bees again as a hobby, I think it was probably because of the frustration I felt when it was necessary for me to give up my bees in order to lend my support to the winning of World War I. I started beekeeping in 1936 with two swarms and three packages, when bees

Almost ready for winter. The unpacked ones in the row had supers of partially sealed honey over an excluder and inner cover so they could rob out any honey they might need for the food chamber to make sure none was short of stores. These partially filled supers will be put back on the weakest ones in the spring. Late fall honey in Massachusetts is too dark and strong for good table honey any way. Being a hobbyist I have not fed any sugar in several years — too much trouble when one cannot be near the yard often. My food and brood chambers are so honey-bound in the spring I sometimes change honey for empty frames to give the queen laying space.

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and equipment were much cheaper than they are today, but start I did at the first opportunity that had presented itself in 20 years.

I subscribed to three bee journals and read all the beekeeping books, and tried desperately not to practice any of the old fallacies of my boyhood days in Central Missouri. The first winter I lost three out of five, so I ordered ten more packages and tried to follow instructions. You should see me hive bundles today.

The first winter we shocked corn fodder around the hives and tied it with a string, leaving the front partly open so the bees could find their way in and out. But, of course, there was no top ventilation, and the two that remained alive should have been combined, as they were so weak and mouldy. The next fall with 12 colonies we decided to pack according to the books, so we did the usual thing one does with shavings, forms, improvised entrances, strips, felt paper, and string. What labor and mess, what a job it was to clean up in the spring to prevent a fire hazard! We still lost four out of 12 and all showed signs of mould. So I ordered more equipment and more bundles. There was no stopping me. We tried straw, leaves, and four with only felt paper, with about the same results and about the same mess inside the hives and outside. We found, however, that the four hives with only felt paper wrapping were all alive on Washington's Birthday, and when we unpacked in April these four hives were in better condition than any other group of four hives we could pick, although one was so short on stores and weak that we combined it with another.

I had made up my mind previously that the only solution was double-walled hives for Massachusetts. Yet I had wintered four colonies in felt paper only. I began to review what I had read about packing boxes, slip-overs, etc. I wanted to get away from sawdust, shavings, leaves, straw, and improvised entrances. All the boxes, cases, etc., I could find in my bee literature at that time used some kind of packing between the hive and packing case. By vacation time I had a very definite idea for a slip-over box constructed from a good insulation board that would require no packing between the hive walls and the packing case. Insulation boards, ¾ inch thick, 4 x 10 feet, were used. These were cut and nailed to 1½-inch corner strips with roofing nails so that nails would be more difficult to pull through the insulation board, and then covered with roofing paper. This made a weatherproof air-tight box, with an air space all around the hive.

Then, of course, we had to have a bottom. A piece of insulation board was cut to fit into the box and was nailed onto four 1-inch strips with a piece of roofing paper between the strips and the insulation board to make it moisture-proof. This bottom had to be slipped under the bottom of the hive and the box inverted over the hive and bottom boards. A hole was cut at landing board level and another near the top for entrances, and the inner cover escape hole was restricted to about ¼ inch. These boxes cost about $2 and my labor in 1938.

When these slip-over boxes were removed from the hives about April 20, all the bees were in such excellent condition that I decided never to use anything else. During this season I made some increase from divisions, swarms, and three packages of Caucasians. I was called west for all of my vacation, and did not get an opportunity to make any additional slip-over boxes, and winter was upon me. Necessity being the mother of invention, I decided I would cut insulation board to fit the hive walls and nail it on with a wrapping of felt paper over all. (I think I read this some place.) This time I bought a Celotex board. This board is ⅞ inch thick, 4 x 10 feet, and is weatherproofed on both sides. It was found that regardless of how I measured the Celotex board, only two lengths or two widths could be obtained from a 4-foot wide board. The problem of a top covering and top entrance was bothering me also.

Then I had an inspiration. All I had to do was cut the 4-foot board in half, then cut two ends 18½ inches and two sides 20 inches. These four pieces would be 24 inches long and would cover the four sides of the hive, and the bottom board and inner cover, with about 2 inches at the top for air space and an upper entrance. Then the front board was cut out (Fig.

2) to set on top of the landing board, and a ½-inch notch cut top and bottom for entrances.

I felt at that time that there should be some insulation on the bottom boards, as we have considerable sub-zero weather up here and the ground freezes 3½ to 4 feet. Therefore, I cut a piece of in-

Fig. 1.—Stand brick protrudes about one inch.

sulation board to fit the deep side of the bottom board and nailed it in with roofing nails. Cost of insulation board—about $2 per hive—good for 20 years. The bottoms are left on the year around and always have the narrow side up. I like this on account of field mice, skunks, etc. Then too, we have a huge bumble bee here nearly the size of a mouse that will occasionally enter a wide opening. It also discourages the bees from robbing

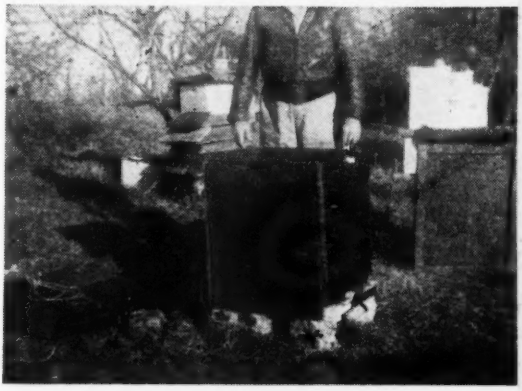

Fig. 2.—Bottom of winter cover rests on the bricks.

one another, and while I am not thoroughly convinced of this, I believe that bees do not gnaw the bottoms of brood combs away from the bottom rail of the brood frame when the narrow entrance is used. Does anyone know if this is true?

(Fig. 4) The outer covers are made 24 x 28 inches or larger, if you feel they are needed for shade. I find them ideal for winter and summer. Push them forward in summer and back in winter. They are

Fig. 3.—Felt paper is wrapped around from the ground up.

made very simply and cheaply by nailing the insulation board onto strips with roofing nails and stretching roofing paper over the top and nailing to the sides of strips. Some of mine are now ten years old and as good as new. There is also an inner winter cover or top of insulation board to fold the felt paper over (Fig. 2). This leaves a 2-inch

Fig. 4.—The cover is then placed on top and weighted down.

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air space between the hive inner cover and the top of the winter cover.

The felt paper is cut short enough so that it does not cover the front of the hive, and the entrances are sure to be left open (Fig. 3 and 4). I use the same felt paper year after year. We just wrap the boards in it and store for the summer under an old apple tree. I use all old felt paper in front of the hives to keep the grass and weeds down. My entire yard is on salvaged paving bricks that protrude about one inch, so instead of nailing onto hives we set the insulation on the bricks at a level with the hive bottom and tie with a sash cord (Fig. 3 and 4). The felt paper is then wrapped around from the ground up, folded over the top, and also tied with string. The cover is then placed on top and weighted down (Fig. 4).

The escape holes in my hive inner covers are covered with ordinary fly screen with a thumbtack, and the insulated covers are lifted off the inner cover in summer by inserting the restrictor stick between the outer and inner cover at the front end of the hive. This gives ample ventilation and they never cluster out on the warmest days. I have noted strong colonies building up to peak in May cluster out on a warm afternoon. I raise the cover and insert the restrictor stick and have them all inside in ten minutes. I never wait any more but open the top ventilation as soon as the weather will permit. I believe that this has cut my swarming in half in the last five years. It may also prevent them from reaching the swarming strength so early. They sometimes do too well here in the spring.

The screens are removed from the escape hole when packing for winter so that bees may use the top entrance if the bottom should become plugged. We had one this spring where the screen had not been removed and the bottom entrance had become stopped apparently only from dead bees and possibly some snow and ice at one time. This was a very strong colony, and they did something that I have never observed before — they uncapped every cell of honey in the hive without consuming the honey. You could not imagine the mess — all the combs spilling out, the frames yellow with excreta. I assume they perished only for want of water and flight. Maybe they tried to trade their honey through the screen to other bees for water, therefore the reason for uncapping all the honey ????

Now to get back to wintering. I believe that if I could set up the colonies to be packed with a reasonable amount of stores and queenright that they would winter anywhere south of the Arctic Circle with less than five percent loss over a period of ten years, and build up fast enough in the spring so that 50 percent of them could be divided.

Crimson Clover Needs Bees

By Howard Scott, Chatom, Alabama

I read in August Gleanings the story about crimson clover and I thought you might be interested in the following excerpt from the current issue of **This Month in Rural Alabama:**

"Alabama's seed crop of popular crimson clover fell short of early season estimates. The supply may be much less than the demand this fall.

"A recent survey taken by county agents shows this year's crop amounted to about five or six million pounds—whereas earlier surveys had indicated a possible yield of 10 to 12 million.

"Low spring temperatures, **lack of bees**, plant diseases, and other factors contributed to these low yields all over the state, explains Ralph R. Jones, A.P.I. Extension Seed Marketing Specialist."

I have tried many times to get farmers to cooperate with the beekeepers in this section by giving us a nominal sum for pollination purposes, but to no avail. I believe the thought is about five years ahead of time in this section of the country.

Glenn O. Jones, of Atlantic, Iowa, on the right, discusses pollination arrangements with seed grower Morris Coomes as Coomes pauses in cutting sweet clover that has been pollinated by Jones' bees.

Your Local Promotion

By Beverley E. Brink, Atlantic, Iowa

Adam and Eve fed on milk and honey. Milk was the first product of the cow to be utilized. In the ensuing centuries, man has devised a thousand uses for the cow and her activities.

But it was left to 20th century man to fully utilize the honey bee. In studying the vicarious sex life of the legume, man has finally found that the only practical way to step up pollination is to put honey bees into his legume fields.

Now, with pollination service gaining momentum, the beekeeper has suddenly turned into an expert on seed production. Or at least he will if he's to be successful. Pollination poses a problem every bit as technical as beekeeping or farming.

It's more important now than ever before that the beekeeper tend to his public relations. He needs to develop a selling technique that will put over his pollination service. USDA is helping by recommending honey bees for pollination of legumes. SCS men and county agents in some areas are helping. The American Beekeeping Federation is doing much to publicize pollination on all levels.

Local Areas Need Publicity Effort

But the area that needs the most concentrated effort is one that can be touched only by the individual beekeeper. This is his local area. Successful pollination on a national scale means thousands of successful working units.

The success of each of these depends on how good a job the beekeepers there have done selling the idea of pollination. You cannot sell a new product unless you know more about it than the other fellow. You cannot continue to sell it unless you keep up on new developments and try to develop other angles yourself.

Because pollination servicing requires a close association with the seed grower, your own job is easier but more diversified. You can't expect all the information you give one farmer to be passed on to the next farmer intact. The second farmer means a new selling job for you. Don't leave it to word-of-mouth.

It's an Education Job

The insect-flower relationship is one of the most remarkable associations in nature. It is also the least

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understood. We got a smattering of it in high school biology, but how much a man remembers of it 20 years later isn't a test of his intelligence. All I remember of mine is how to dissect an angleworm—and I should hate to think of this as a gauge of my intellect.

A man retains what will be of use to him. Chances are it isn't until you have had an advanced course in botany that you learn about pollination of legume flowers. So you have an education job to do. Ninety-nine farmers out of 100 don't even know the structure of a legume flower.

A baker would think you had bats in your belfry if you suggested leaving the yeast out of bread. But agriculture has grown from the wooden plow to the gleaming six-bottom, impervious to its "yeast".

What makes alfalfa reproduce? If you told the grower "the bee", his immediate reaction would also be that you had bats in your belfry. The transfer of pollen from the stamen to the stigma is the logical correct answer. Neither wind nor rain can do much about the sex life of self-sterile legumes. It takes a pollinating insect.

All this you must explain. But explaining won't tell your whole story. Demonstrate it by actually taking a red clover or alfalfa blossom and pulling the bloom apart to **show** the grower how pollination takes place.

Get a bee with pollen balled on her legs. Show the grower that the bee actually does carry pollen from one flower to another. Newman Lyle of Sheldon, Iowa, does this at intervals during the blooming period of the crop. This way the grower knows just how much cross-pollinating the bees are actually doing at different times during the blossoming.

Selling Methods are Useful

In making the first contact with the seed grower there are several important selling techniques that should be applied to your argument. The following five points were taken from a sales manual and adapted for use in selling pollination:

1. Give him time to ask questions.

2. Ask questions which he will have to answer.

3. Have him look at books, pamphlets, articles, test results.

4. Illustrate your points by actual demonstration.

5. When you are using figures to illustrate the number of bees needed, or the proportional seed increases, write them down so he is following along with you, or if possible have him do the writing or computing.

In general, your prospect will stay interested if: (a) he can readily see himself benefitted from the proposition; (b) he can understand the proposition; (c) he can take an active part in the presentation — that is, examination of test results, articles, tripping a flower himself.

Keep Plugging Local Publicity

A Texas beekeeper has put up signs advertising pollination in his local bank and store windows. These signs needn't be expensive. A piece of cardboard, a little showcard paint, and a friend with an artistic flair are all you need.

Business men like to be known as progressive, and they may like the idea of helping publicize an agricultural innovation. Farm loan offices, insurance offices, and farm implement dealers are especially good places for this type of display.

This, incidentally, should be another angle in your public relations program. Local dealers in any farm commodity or farm necessity have their influence on the farmer. The farmer respects their judgment and if you can sell a dealer, an insurance, or loan man on pollination, your time has been worthwhile. It will pay off later.

Don't neglect your county agent. He probably doesn't have access to all the developments in pollination and the effect of insecticides on beneficial insects. You are in a position to get this material through beekeeping organizations and from trade magazines. Be sure he gets a copy of any material that comes to your attention.

He gets around to a lot of different farmers. When he's talking shop with them you will want him to inject enthusiasm for pollination into the conversation. He can't do this if you don't keep him informed. Go in and pass the time of day with your county agent whenever you run across something unusual or whenever you have a problem. He'll be glad to help you, and you need him for a friend in this public rela-

tions job that comes with pollination servicing.

Arrange Pollination Talks

Try to arrange talks before farm groups such as Farm Bureau, seed grower and dealer meetings. Whether you are an extrovert or an introvert is beside the point. Maybe you don't like to talk in front of a group, but it's your responsibility to yourself and to the rest of the industry to sell pollination in your area.

Program chairmen are often at a loss for speakers. They will be glad to put you on the program when you have outlined your material to them and convinced them of its validity.

Or maybe it seems more diplomatic to have a seed dealer or county agent give the talk. If you have him convinced of the importance of pollination and have supplied him with material, this sometimes is better than actually giving the talk yourself.

Relay Your Results

An important angle in your public relations is relaying information about your pollinating activities to your state entomologist, your American Beekeeping Federation headquarters, and any state departments that are likely to publicize the information. This shouldn't be overlooked. Get your official results to an organ that will be able to use them to the advantage of yourself and other beekeepers. Let your local farm editor in on the seed increases you're getting.

If you get some unusually good results, but encounter problems in legume seed production, don't hesitate to write your state college agronomists. They may be able to iron out your problem, and at the same time you will be adding to their information on pollination of legumes.

Be Diplomatic in Talking Payment

Before you start talking payment for pollination, arm yourself with all the different agreements being made over the country. Essentially all agreements now stem from two bases of payment—flat or per-colony rates or a percent of the seed crop.

Per-colony rates vary from $1 to $10 for each colony put on the field. Those starting to pollinate in an area where it has never been done

Show the grower that this is the way a bee pollinates an alfalfa blossom. Floret in front of bee's back leg is untripped yet.

find the easiest way to get started is to take half the seed increase. The mean seed yield is set at an average over several years. This establishes confidence in you and in the service you have to offer.

Where grower confidence in pollination has been built up, beekeepers can ask from one-fourth to one-third of the total seed crop. Other arrangements combine per-colony rates with a share of the seed increase. One farmer-beekeeper arrangement calls for a two-way split of all expenses and results, both honey and seed.

Somewhere in this wide range of payments you can find the one that appeals most to you and the growers in your area. If you think it best to start out with a low rate of payment, don't let your prospects ignore the fact that higher payments are being made. Keep them informed of what's going on in other seed-producing areas. This will minimize your selling job. They wont be so startled at the idea of paying for pollination.

Some places it hasn't proved a good idea to begin pollinating fields just as an "experiment", not requiring payment. Much better to ask for a percent of the seed increase than not at all. Farmers are all too apt to get the idea that you can afford to give this service free. You don't want to move your bees out of an area to prove your point.

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An Observation Beehive

By J. H. Shull, High School, Columbia City, Indiana

[Reprinted from The American Biology Teacher, February, 1949.]

Fig. 1

The writer has maintained an observation beehive in his biology class room at various times during the last ten years.

At first a small observation hive was purchased from one of the bee supply companies. However, it was found to be inadequate, so it was changed from time to time. Figure 1 shows its present form which has been found to be ideal. It is in place in a window in the class room. There was a colony of bees in it at the time the photograph was taken in May, 1948.

Figure 2, taken the same day, shows two freshmen biology students, Carol Gipe (pigtails) and Phyllis Smith (right), looking at the bees several days after a two-pound package had been put in the hive. Carol is pointing to a brood frame filled with wired wax foundation. Below it is a similar frame filled with comb which was drawn out from foundation in 1947 by another colony of bees. On a level

Fig. 2

with Carol's forehead is a beeway section holder with four sections. The colony is still small, and almost all of the bees are above in the hive body. The hive body contains eight frames similar to the one at which Carol is pointing.

Figure 3 shows the construction of the observation part of the hive. It consists of a framework which holds the two standard Hoffman frames and the section holder (not shown). The bottom frame, when in place, hangs on two small pieces of sheet metal (A) which bridge the two long, vertical slots at either end. The top edges of the two pieces of sheet metal are 9⅛ inches above the slotted bottom piece (B). The slots in the end pieces (C) are 16⅜ inches from top to bottom. There is another pair of sheet metal pieces (not shown) farther up which hold the other frame. The sides are $\frac{3}{16}$-inch plate glass covered with ⅜-inch plywood. The space between the plate glass sides is two inches

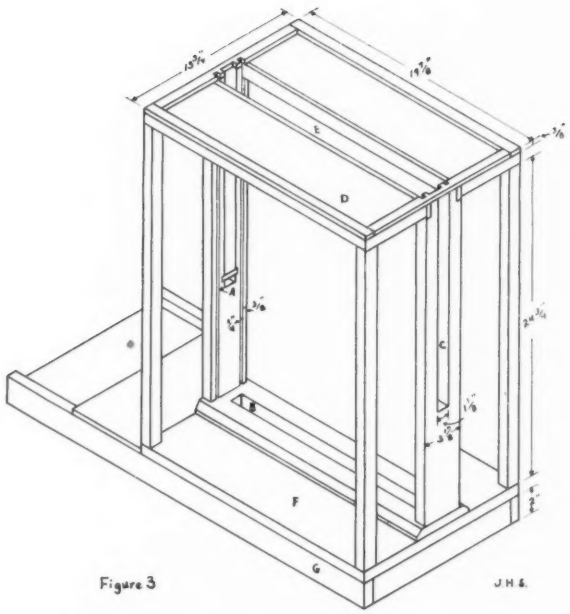

Figure 3

wide inside. The glasses slide in from the top in saw kerfs. The plywood covers may be removed for observation. The slotted ends have long, vertical doors (not shown) which cover the slots. These doors are opened to manipulate the frames. On top of the observation part of the hive is a ¾-inch plywood platform (D) on which eight-frame hive bodies or section supers may be placed. The platform has a long slot (E) to admit the frames and section holder and also to permit the bees to go up and down. Around the edge of the platform is a ⅜-inch strip which gives the bees a bee space when a hive body or super is on top. All of the other pieces in the hive are ¾ inch in thickness. The bottom (F) is a piece of plywood with a long slot cut down the middle of it. This slot matches the slot in the bottom piece (B). This opening allows the bees to come up from below. The bottom (F) rests on a bottom board (G) which is like a standard bottom board except that it is longer. The whole hive is covered with a piece of glass and a standard outer cover.

The hive is placed in a window with the bottom board underneath the sash and extending to the outside so that the bees may go readily in and out. Bees live a normal life in this hive, and biology students enjoy observing their activities.

If the hive is to be used primarily for observation purposes, a two-pound package of bees may be obtained from a southern beekeeper about the first of May (in Indiana) and put into the hive by shaking them into a cardboard funnel arrangement placed on top of the hive. A section is removed from the section holder, and the queen cage hung in its place. In a few days the queen will be released and the cage may be removed. Frames with foundation or drawn comb are inserted in the hive prior to the introduction of the bees.

If the hive is to be maintained with the additional purpose of producing honey, the package may be introduced by placing it in a hive body on top of the platform along with three or four frames filled with foundation or drawn comb.

The alternative method of populating the hive is to take it to a local beekeeper and let him introduce a captured swarm or one of his weaker colonies.

The use of hive bodies on top of the observation part of the hive gives the bees more room and helps to prevent swarming. The bees may even store a little surplus honey in section supers placed on top of the

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hive bodies. However, if hive bodies are used, the queen will stay in them unless she is forced to stay below by placing a queen excluder over the top of the observation part of the hive.

It is impossible to maintain the colony during the cold months of the year unless special provisions are made to keep the bees cool. Owing to the warmth of the room, the bees will be active. When they go outside they become chilled and are unable to return. During the last two years the colony has been wintered by building a small, temporary inclosure of kraft board around the hive after having opened the window an inch or two. Screen wire cloth was placed in the window opening to prevent the bees from getting into the inclosure. The first year the queen was in the hive body on top. The second year she was kept below the excluder. However, she did not survive the last winter.

As an alternative, the bees may be killed in the fall by pouring carbon bisulphide in the hive. The dead bees are then removed, and moth crystals are placed in the hive to prevent the comb being destroyed by wax moths.

During the summers of 1948 and 1949 the writer kept a colony of bees in an attic window of the high school building from which he took four supers of comb honey each summer. We awarded this honey to biology students who made the highest test grades throughout the two school years.

Anyone who desires to keep an observation hive in his class room should talk with local beekeepers and read references. He should also buy a standard eight-frame hive.

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Marshall Levin and Dr. G. F. Knowlton, of Utah State Agricultural Experiment Station, examining honey bees found to be tripping alfalfa blossoms on the experimental farm at North Logan, Utah.

Pollinizers

By Allen Latham, Norwichtown, Connecticut

A few decades ago the chief value of the honey bee was the honey she gathered. At present it seems that the chief value of the honey bee lies in our apple orchards. Why is this, one naturally wonders?

This country had its thousands of plants that needed aid in being pollenized ages before **Apis mellifica** was brought into this land. There were then untold thousands of insects that visited the flowers, insects far less numerous now than they were even in my boyhood. As a boy I used to watch the little bees of all colors and of all sizes at work in blossoms. Why now do we need to move colonies of honey bees into apple orchards?

There are two reasons, if not more. Orchards are now covering acres where years ago orchards were small. A second reason is that untold thousands of the other little bees have been killed off and can no longer do the work required.

In 1899 I fell in love with the seashore not far from Provincetown, Massachusetts, and bought building lots and put up a cottage there. I had not been long in our cottage before I discovered an interesting fact. There were no honey bees on that part of Cape Cod. I ranged all over that territory and never saw a single honey bee. I saw many bumblebees and many other bees in vast numbers.

The fruits all over that part of the cape were numerous and plentiful. Blackberry bushes were loaded with fruit soon after wild strawberries were plentiful. Then the blueberry bushes and huckleberry bushes were also loaded. But of all fruits the most abundant was the shadbush, so loaded that a person could pick a quart in two minutes. The shadberry was also called Juneberry, and by the natives on the Cape, Josh pears.

The Juneberry on the cape was fine eating and made as delicious pies as I have ever eaten. There were many varieties, but the best ones were about five-eighths of an inch long, three-eighths of an inch across, and bluish-red in color. In August the wild plum would be ripening and Portugese women from Provincetown would pass our cottage carrying on their heads bags with nearly a bushel of plums in them. I once found a bush only a foot high and a foot across, and it had two quarts of fine plums on it. Those plums made a delicious jelly. Apple trees were loaded with fruit although they never had a honey bee near them.

I took bees to the Cape and had about 20 colonies there in a few years, and some years I got honey enough to pay all the expenses for our stay at the cottage. Every morning the children would gather the whiskey bottles along the beach and I would wash them and fill them with honey. It was easy to fill them if the honey was hot but when it got cool the process of getting the honey out of the bottles was a problem. "Mr. Latham, what is the best way to get the honey out?" was a frequent question. My answer was simple. "Put a chair next to your table and put a bowl in the chair. Remove the cork from bottle and lay bottle on table with neck above the bowl. Place a book under the bottom of the bottle, then go in bathing. When you come back from bathing you will find all the honey in the bowl."

Though the honey bee is a good pollinizer, the bumblebee is a better one and some of the little wild bees are still better. Those tiny bees go bodily into many blossoms into which the honey bee and the bumblebee cannot go. The bumblebee will visit flowers when it is so cold that no honey bees are out of the hive.

Why is the bumblebee so scarce now? When I was a boy nests of bumblebees were very common and where a hundred of those bees were then seen, nowadays only a dozen or so will be seen. The reason is very simple for all localities where there are many bee hives. Only the queen bumblebees live through the winter and each queen is expected to hunt a suitable nest like that of a field mouse, a bunch of feathers, a bit of buffalo skin, and other like material. In old times the majority of those queens would live and de-

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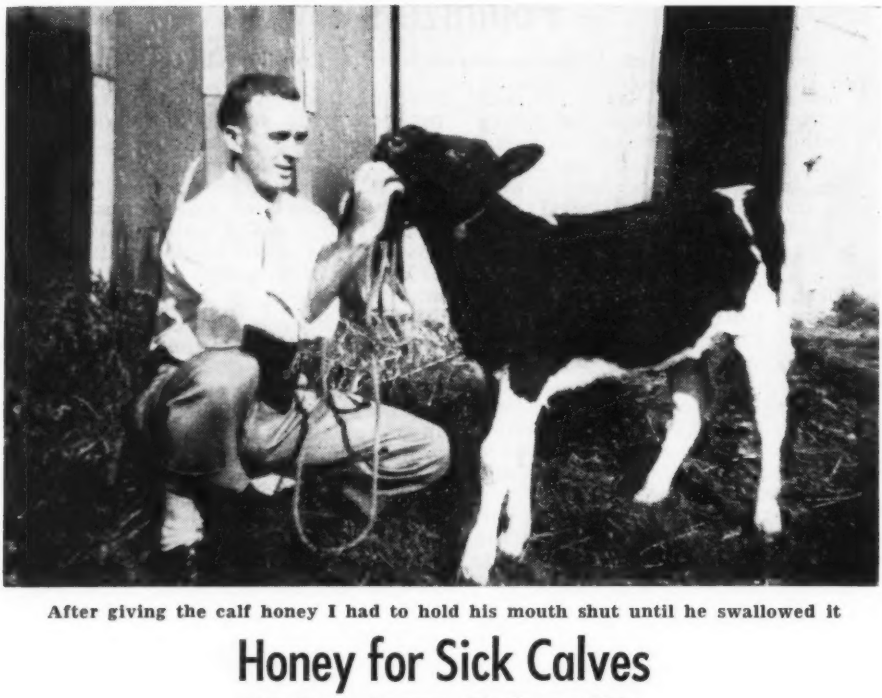


After giving the calf honey I had to hold his mouth shut until he swallowed it

Honey for Sick Calves

By W. B. Brown, Chatham, Ohio

From time to time during the past several years my wife, Patricia, and I have bought very young calves from dairy farmers who have preferred to sell them rather than raise them. During the first year we struggled through the nursing stage by milking our family cow and feeding the milk to the calf from a bucket. This resulted in frayed tempers, mutilated fingers, and quite often a face full of milk. We finally bought a first-calf heifer which, as it turned out, would mother anything that could walk to her. This solved our milk feeding problem but had no noticeable effect on the one thing that was giving us so much trouble—scours.

Many of you will know the crippling effect that scours can have on young calves and the continuous search for something that will save them. For those who are unfamiliar with this disease, let me explain briefly that scours is dysentery in calves. The whole intestinal tract and stomach become raw and sore and digestion is hampered to such an extent that quite often the afflicted animal dies. We tried the remedies that we had been told of by neighbors—boiled milk and the like—and were successful in saving all of our calves. The remedies that we used, however, never seemed to make much difference in the day-to-day appearance of the calves and their symptoms. We were always inclined to believe that they were getting better in spite of our determined but theoretical medical efforts.

Then early last October we went to see a farmer friend who had two newborn calves that he had previously told us we could buy. One was a nice little heifer calf, but the other—bless his heart—was just managing to stay on his feet. Our friend evidently felt guilty about selling it to us for he asked only $25 for the pair of them at a time when they were selling for $25 apiece. We took the pair home and started to strengthen them. The bull calf, however, failed to improve. He was too weak to be aggressive enough to get his share of milk from the heifer and had a case of scours that prevented the little milk we could get into him from doing much good. We feared that we were on the brink of losing our first

calf until I happened to remember the honey that I had taken from my hive of bees which I keep for pollination purposes. I knew honey was an excellent source of energy and also knew honey possessed certain healing qualities. I took two jars to the barn and the next morning I started giving it to the sick calf. Each morning I would give him about three teaspoons of honey from my finger and hold his mouth shut until he swallowed it. At night I would give him another three teaspoons. If I was at home at noon I would again give him two or three teaspoons. It did not seem to matter whether I gave the honey before or after he nursed the cow but as I remember, it was after he had nursed. After two days of this treatment the calf showed a marked gain in strength and actually ran and kicked up his heels from time to time. He became more aggressive in his twice daily nursing match with the little heifer calf until he was getting his share of the milk, and then some.

The scours were disappearing after three or four days on honey and after six days of treatment I stopped feeding him honey and left him on his own. He never had a relapse. He kept nursing and went onto grain at the same time as the heifer calf. He did fine from then on. When he was three months old we sold him to another farmer who figured he was worth $55 to him, and he was, easily.

This particular calf was a Holstein, but I see no reason why the breed should make any difference. They are all susceptible to scours so I suppose that they are all susceptible to treatment.

I do not know that this honey treatment is sure fire but I know what an amazing sight it was to see that dying calf come into its own after we got some honey into his system.

As you know, calves are not easy to come by and it is disheartening to lose one. Next time scours threaten to take a young calf perhaps you will try this honey treatment. The cost is negligible and it might save you some good calves. I hope it does.

Bronx County, New York, beekeepers at a summer meeting

XUM

Honey in the Diet

A Few Notes From an Old Note Book
By A. V. Thomson, Gresham, Oregon

The following notes may be of some interest, even though I can make no claim to being either a dietitian, a nurse, or an M.D.

Some years ago I was employed as cook and general man of affairs in the diet kitchen at Multnomah Farm (County Poor Farm) Troutdale, Oregon, and during that time I had a great deal of experience with honey in diet.

First, I want to mention a few cases that occurred outside the diet kitchen, some of which were without doubt merely old men's notions.

"Uncle Joe" was "a very sick man", confined to his bed for almost two weeks and he was certain he would die if he did not get some "honey in the comb". Ordinarily I would not bother with inmate trade in such amounts as "ten cents worth of honey", as I sell all my honey to stores. But I did **give** "Uncle Joe" a shallow frame of "honey in the comb" and in three days he was up. The fourth day he went outside for a walk and the first week he hit a fellow inmate with his cane "for stealing my tobacco". He believes to this day that honey saved his life. Well, "If you believe it, it's so". At any rate, honey did ease his mind and nature did the rest.

"Swiss Herman" had a bad cough and throat irritation. The honey I **gave** him eased the irritation and enabled him to sleep well at night, "und Gott pless you, you are vun real frient!"

George, a Jugo-Slav friend, had "a big pain in his stomach" and "plenty burning lika fire". A few weeks of honey instead of sugar (of course I mean ordinary granulated sugar), and George is still "fine, I eatum up ev'ry ting, no more pain 'tall".

Several others received help by using honey for colds.

These few instances merely tend to show that honey is a grand sweet to use in everyday diet and are only intended to show its usefulness in and for such diet.

Even if one of the above mentioned cases was purely psychological, "Uncle Joe" **wanted** honey so badly that he **needed** it, and when he got it, it helped him. Nothing else would do.

We will now take up the diet kitchen patients, a place where I was dignified by the title "dietitian", and ranked as a member of the medical staff.

We had the following chronic cases to serve:

Men's Department: Diabetics, 16; various ailments, mostly gastric and intestinal cases, 6.

Men's Infirmary, non-ambulatory: General soft diet, 6; diabetic, 1.

Women's Department, mostly non-ambulatory: Diabetic, 2; general, 2.

Men's Department, not Infirmary and non-ambulatory: General, 2; special heavy, 1. Total chronics, 36.

From time to time special cases requiring a short period on diet arose. It was quite a job preparing and serving all that food, for each patient had a tray and all food was weighed or measured, but I had my charts and good help who followed our daily briefing.

During my stay at Multnomah Farm I was employed for two years in the diet kitchen and afterward I had three other positions and also kept bees for myself.

We had four different resident doctors while I was at the Farm, whom I shall designate as Dr. W., Dr. M., Dr. A., and Dr. G.

My two years in the diet kitchen were under Dr. W. He was a brilliant young doctor, had finished his internship, was full of ambition, extremely careful and thorough—and very successful.

One of Dr. W.'s hard and fast rules was **"no sugar other than honey on the diet table"**, and honey allowed only on his orders to diabetics, others permitted to use honey **ad lib.**

Three diabetics were allowed no sugar at all and one refused to eat honey.

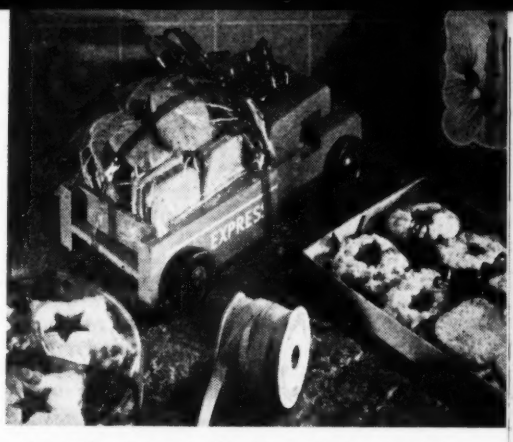
The gastric and intestinal patients derived great benefit and declared that honey seemed to soothe their inflamed internal organs.

Among the diabetics there was seldom an insulin reaction and of

(Continued on page 766)

Make It a Honey-Way Christmas

By Mrs. Benj. Nielsen
Aurora, Nebraska



Honey-way cookies for Mom, Dad, or small fry's Christmas. —Photo courtesy Kellogg Company.

With prices soaring and apparently no ceiling on taxes it is a better-than-ever idea to make this a practical Christmas this year. So break out a sixty from the honey storage room and pour some of this imprisoned sunshine into attractive, sure-to-be-used-afterwards containers, or work it up into honey goodies. Package some of this golden sweet in gayly-colored plastic pitchers or sparkling beverage pitchers and fill the accompanying juice glasses with quivering honey jelly. These lovely containers can be used afterwards for honey-sweetened lemonade, fruit juices, or honey-way waffle batter as they are used in the Nielsen household.

Too early to work up honey goodies? Not at all! Early in September a honey customer of ours made up a huge batch of honey cookies from a recipe over 100 years old. "You know," she told me, "Honey cookies aren't really good until they are aged." This aging or ripening process brings out subtle flavor not apparent when freshly baked. The same is noticeable in honey candies and fruit cakes.

Bake a luscious coffee cake in a long aluminum or glass baking pan, gift wrap, and tuck the recipe in the be-ribboned tie — a boost for honey!

For small fry fill a truck or some toy with cookies, candies, or honey popcorn balls and tack the recipe to the endgate or axle. Of course, he'll want Mom to bake some more for him.

Honey Popcorn Balls

Three-fourths cup sugar, ½ cup water, 1 teaspoon salt, ¾ cup honey, and 3 quarts freshly popped popcorn.

Combine sugar, water, and salt; stir until sugar is dissolved. Cook until very brittle (300 degrees). Add the honey slowly, stirring until blended. Cook until the thermometer registers 240 degrees (about one minute). Pour syrup over the popcorn and form into balls. Wrap in heavy waxed paper at once.

Christmas Star Cookies

One-half cup shortening, ¼ cup brown sugar, ¼ cup honey, 1¾ cups sifted flour, 1 teaspoon baking powder, ⅛ teaspoon salt, 3 tablespoons water, ¼ teaspoon vanilla, 1 cup corn flakes, and ⅔ cup thick honey-sweetened cranberry sauce.

Blend shortening, sugar, and honey. Sift flour, baking powder, and salt together and add alternately with water and vanilla to first mixture, stirring well after each addition. Stir in finely crushed corn flakes. Chill thoroughly. Roll out on lightly floured board to ⅛-inch thickness. Cut with star cutter. Put a small amount of cranberry sauce on center of each star. Cover with another star cookie with center cut out. Bake on greased baking sheet in moderately hot oven, 425 degrees F., about 10 minutes. Yield: 2 dozen filled cookies 2½ inches in diameter.

Honey Coffee Cake

One package or cake yeast, 2 tablespoons lukewarm water, 1 cup milk, ⅓ cup honey, 1 teaspoon salt, ¼ cup butter, 1 egg, 4 cups sifted flour, 1 teaspoon cinnamon, and ⅓ cup brown sugar.

Soften yeast in lukewarm water. Scald milk. Measure honey, salt, and butter into mixing bowl. Add milk. Cool to lukewarm. Stir in softened yeast. Beat egg. Add. Mix in flour combining thoroughly. Spread on well greased large baking pan and sprinkle with combined cinnamon and brown sugar. Let rise until double in bulk. Bake in moderate oven, 375 degrees F., about 25 minutes.

Second Glances

By C. M. Isaacson

Honey bee pollination of alfalfa has been coming more and more to the attention of growers as research and experimentation have shown how best to obtain satisfactory results. Proper and timely application of insecticides is perhaps the most important factor. With control of pests accomplished, the honey bees can really produce larger seed crops through their ability to thoroughly pollinize a field. But with the danger of loss or severe damage to colonies used for this purpose through insecticides and the poor prospect of a paying crop, a beekeeper must have assurance of a seed share or proper payment to make it worthwhile to engage in this work (page 662).

Dependable honey flow forecasting would go a long way in enabling a beekeeper to operate profitably—by making it possible for him to minimize the dangers of poor years through moving to locations offering more promise. But the impossibility of knowing what weather a particular locality may have in a given season make such flow forecasting a dubious thing (page 665).

The Langstroth Beekeeping Library is alone a work sufficient to place beekeepers in Dr. E. F. Phillips' debt. Much of his other work, especially in connection with research, is not as apparent, but the long-time effects have helped the whole industry. I can well imagine that his "retirement", though well earned, may give still other benefits—such men as he seldom cease work entirely (page 668).

Substitution of honey for sugar can be satisfactorily accomplished if the rules mentioned by Mrs. Nielsen are followed—at least, in a good many dishes. Pay especial attention to the caution to cook at a lower temperature. Honey does caramelize and than scorch quite easily. This is especially true of the light-colored types (page 671).

S.M.A.'s two-queen colonies surely produced (page 674) but it would be of interest to know just how the labor with them would compare with running such a unit as two separate colonies for instance. That would be important if the method were to be used on a large scale.

The "four sticks entrance" described by Milton Stricker is good and its use will provide for the escape of moisture as well as a flight opening in case of deep snow. Is the porch entirely necessary, however? Or the entrance reducer? Perhaps I overstress simplicity but the shingle strips could be used alone and the size of the entrance regulated by the amount they are shoved in (page 676).

The tremendous strength of a honey bee in relation to its size is shown by the incident related by Allen Latham (page 677). I have several times seen a like incident to that which he tells. I often let loose attendants before introducing a mailing cage queen and these strange bees will try to enter some nearby hive. It was in such cases that I saw the hive guard attempt to fly away with the unharmed stranger, and accomplish the feat for a short flight.

Yes, cellar wintering is the cheapest of all methods, and where it is convenient and one has a **good** cellar, it is the safest, year in and year out. For large holdings spread out over a big territory it is not always feasible, however — and I want to object to that $2 a colony outdoor packing expense figure. It is far and away too high (page 679).

Flavor rather than color should be the deciding factor in judging honey, says the editorial on page 681. That surely should be the case, but unfortunately it is not as far as the individual beekeeper is concerned at least. This is not good, especially if some darker honeys are actually better for health. Let us talk honey—not merely its color.

The lowest chamber in a three-brood chamber hive is of little use for winter if it contains only a very small amount of honey (page 686). Why not take it away and give it back in the spring when it actually can be of value? It will mean less space to keep warm during the cold periods and less depreciation of equipment. Excluders are good to help insure adequate honey in the brood chambers, though—especially in ten-frame standard equipment.

American Honey Institute News Notes

By Harriett M. Grace, Director
Commercial State Bank Building
Madison 3, Wisconsin

The Home is Our Market Place!

The home with a family is the best market place for honey. When honey is put in the home for infant feeding, it usually becomes a staple in that home.

And speaking of babies, do you know that estimates show a potential of 69 million children by 1960. What a market!

What service are we giving to the home and to children? Are we furnishing them with individual honey dispensers? Have we a cereal bowl with a sentence, "I eat honey on my cereal" pictured on it? For the boys one might have a dish with "For touchdown energy eat honey every day".

When a dispenser is shown in a picture, we have the word "Honey" printed on it so that there will be no question as to what is in that dispenser.

How would you like to make this colorful, delicious sauce for your next ice cream dessert?

Just take 1½ cups of clean apricots and grind fine. Heat 2½ cups of honey to just below the boiling point. Remove from the heat, add apricots and ½ cup of maraschino cherries. Stir to blend.

It is yummy on either vanilla or mint ice cream.

Every cook should prepare for the holidays with a copy of "Old or New Favorite Honey Recipes". Slip the books into holiday decorated envelopes or enclose them in gay bands carrying your name and the greetings of the season.

Then present the books to your best customers. Have plenty of books on hand to sell, too. Suggest to your customers that they make lovely Christmas gifts — just the thing to tuck in a box to send away or to hide for mother under the tree.

Holiday goodness galore will come from the pages of "Old or New Favorite Honey Recipes". Piping hot honey rolls and orange nut bread, tangy apple sauce cake and spiced honey nuts, snappy Roquefort cheese dressing and fruit toppings; all are sure fire ways to make junior's eyes — or daddy's waistline — bigger and bigger.

All these recipes and many, many more can be found in the 52-page Old Favorites book or the 56-page New Favorites book. Order your supply today. Send $12 for each 100 copies of Old Favorites and $20 for each 100 copies of New Favorites to the American Honey Institute, Madison 3, Wisconsin.

A new leaflet for the five-pound pail for regular distribution will be off the press when you read this. Order a supply at $1 per 100 copies.

The Institute is again putting out handy pocket-sized calendars for the new year. The design is new, in two colors — golden yellow and green. The calendar has the slogan "Honey in Some Way Every Day". It points out the two most important honey weeks, Honey for Breakfast Week and National Honey Week. The entire back page is blank for your imprinting.

Prices for paper and printing have gone way up this year. However, we are able to offer you these attractive calendars at $1 for 75 copies. So just put a dollar bill in an envelope today and you will have your calendars soon.

Give each customer a calendar as a service, and it will remind him to buy honey all year long. Order enough so you can put one in with your Christmas cards.

* * * * *

Write It

Should you have an interesting experience in handling bees or selling honey, or any subject relating to beekeeping, put it on paper and send it to Gleanings in Bee Culture, Medina, Ohio. Other readers might like to know about it. An article is made more acceptable when good clear pictures are included. Suitable material is paid for upon publication.

XUM

1.—Mr. and Mrs. Clarence L. Benson of Arizona who did much to make the meeting a success.
2.—Dr. S. W. Edgecombe of Utah Agricultural College at Logan, Chairman of Honey and Pollen Plants Committee.
3.—Prof. E. J. Anderson, State College, Pennsylvania; Dr. H. H. Laidlaw, Davis, California; and Dr. R. L. Parker, Manhattan, Kansas.
4.—The mountainous skyline just outside of Tucson.
5.—The cafeteria where the multitude was fed daily.

Pollination Conference at Tucson, Arizona October 24 to 26, 1950

By M. J. Deyell

During the six years since the inception of the National Honey and Pollen Plants Committee of the American Beekeeping Federation, annual meetings have been held in different sections of the country. It seemed appropriate this year to meet in Tucson, Arizona, which has an altitude of 2500 feet and is virtually surrounded by mountains, and is a city of perpetual sunshine. Those who enjoyed the azure blue skies during the day, and the turquoise blue canopy studded with stars at night, almost close enough to touch, can never forget the three days spent in that city. Even though the days were hot—above 80 degrees—the nights were cool enough to sleep comfortably.

Well over 200 people from 19 states and Canada were present to enjoy an unusually rich program.

Clarence L. Benson, Co-Chairman of the Pollination Committee, after calling the meeting to order, presented Dr. P. S. Burgess, Dean of the Arizona College of Agriculture, who mentioned agriculture, mining, and tourists as being important in Arizona.

Roy A. Grout, President of the American Beekeeping Federation, reviewed briefly the work of the Pollination Committee, as well as some objectives of the future. This committee has already done some excellent work in bringing about a better understanding of the importance of honey bees to agriculture.

Dr. L. A. Carruth, head of the Department of Entomology at the Universtiy of Arizona, in his talk on the pollination of agricultural crops, said that pollination by insects was not recognized until about 100 years ago. Ten percent of plants are pollinated by wind. 5 percent self-pollinated, and 85 percent are pollinated by insects. Of the approximate one million insects in the world today, honey bees are the only ones to get their food from plants, hence the importance of bees in pollination.

Woodrow Miller of Colton, California, one of the large commercial beekeepers who operates in vari-

6.—A shot from the top of the Agricultural Building showing part of the campus.
7.—Getting registered—near the door of the meeting place.
8.—Wes Landvatter, Phoenix, Arizona; and R. C. Stone, Los Angeles, California, of the Superior Honey Company.
9.—Dr. L. A. Carruth, head of the Department of Entomology at the University of Arizona.
10.—The college apiary on top of the Agricultural Building at Tucson.

ous states, said that the honey bee is the spark plug of agriculture. Pollination and honey production are two separate businesses. The beekeeper may not know too much about pollination, but neither does the average seed grower know much about honey bees.

Dr. S. W. Edgecombe, head of the Department of Horticulture at Utah State Agricultural College, Logan, Utah, and Chairman of the Pollen and Honey Plants Committee, reviewed some of the fundamentals of pollination, emphasizing the fact that legumes are needed for soil fertility. Over 50 farm crops need honey bees. There needs to be a unanimity of opinion among college men in agriculture so that those who seek information may be properly informed.

Herman Menke, Agriculturist from the State of Washington, said that in his recent work on pollination of apples he found that most of the insects visiting the apple blossoms were honey bees. Wild bees were not sufficiently plentiful in that state to do much pollinating.

Dr. Howard Peto of the James Seed Co., Rocky Ford, Colorado, brought out the fact that bees are the best pollinators of melons. Hand pollination is less productive and more expensive, costing twice as much as honey bee pollination.

S. E. McGregor, of the Bee Culture Laboratory of Arizona, emphasized the importance of bees for pollinating cantaloupes.

Honey Plants in the Soil Conservation Program

A. E. Borell, of the Soil Conservation Service, Albuquerque, New Mexico, said that plants used in conservation work should be nectar plants and that a planned program is needed.

Flowers of the Arizona Desert, an illustrated lecture by Dr. W. S. Phillips of the University of Arizona, was greatly enjoyed on the first evening. Those who have never seen the profusion of bloom covering the Arizona desert when weather conditions are favorable, should view this gorgeous display of colors at some future time.

George H. Vansell of the Pacific States Bee Culture Laboratory, Davis, California, occupied the chair during the second day.

XUM

Ray, Grant, and Roy Hastings, commercial beekeepers of Mesa, Arizona

Maurice A. Perry of Hemet, California, gave an extremely interesting talk on bees for alfalfa pollination. He said that 850 pounds of clean seed per acre is not uncommon, even a higher seed yield may be obtained by having an adequate number of colonies per acre. Growers like to have at least five colonies per acre. Honey bees are essential for alfalfa pollination because wild bees are scarce.

Because of the difficulty in obtaining hives of bees at the proper time for pollination work, some growers have considered going into beekeeping to solve this problem. Mr. Perry is not in favor of seed growers going into the bee business because they do not understand the handling of bees. However, he warned that if rental prices on bees become too high, seed growers will be forced to have their own bees. Beemen and seed producers should sit down together and talk over their problems.

Harry Whitcombe of Davis, California, President of the California State Beekeepers' Association, gave us an extremely interesting talk on "A Beekeeper's Experience in Alfalfa Pollination". He said that it is possible to produce 1200 pounds of clean seed per acre and that a maximum of 1500 pounds has been produced.

Mr. Whitcombe believes that 2000 pounds per acre is a possibility provided an adequate number of bees are placed near the bloom at the right time.

There are a number of basic arrangements for pollination on the West Coast such as 20 percent of the total seed over 400 pounds; 30 percent over 700 pounds; $2.50 per colony rental with a guarantee of 60 pounds of honey plus winter stores; a flat $2.00 per colony rate; $2.50 per colony plus 15 percent of the seed over 400 pounds; and 20 percent of the seed over 700 pounds.

When the seed grower finds that the beekeeper cannot make a living from honey, he is more willing to enter a share-the-seed contract.

Frank E. Todd, Apiculturist, University of Arizona, says that native bees will not do the pollinating job. There are approximately one million colonies in the 11 western states. Half of these are owned by 1500 beekeepers in lots of 50 or more. If four colonies per acre are used, we would cover only one quarter of this area. Prices of honey are not in line with production costs. Honey is moving slowly. Unless beekeeping can be made more profitable, bees may become more scarce. It is necessary to saturate a seed area with bees in order to obtain the tripping of blossoms. Recently it was found that an increase of from four to six colonies per acre resulted in much better pollination and seed yield. It will be

necessary in the future for seed growers to improve their harvesting methods which are now faulty.

Frank V. Lieberman, U. S. Legume Seed Research Laboratory, Logan, Utah, emphasized the necessity of applying insecticides for pest control properly and at the right time. Parathion should never be used while alfalfa is in bloom. Oil-impregnated dust has not been found very successful. DDT and toxaphene should be applied late or early in the day. Parathion is not good for bees.

Following the Conference banquet in the Pioneer Hotel, Ernest Douglas, Editor of Arizona Farmer, the inimitable toastmaster for the occasion, presented Roy Grout, who spoke on the new partnership between the farmer and the beekeeper. More grasses and legumes are the key to agriculture. Forty-five million acres of cultivated land are being retired to grasses which should mean better bee pasture. There is a lack of legume seed at the present time and this should encourage more seed production.

Dr. E. D. McKee, Professor of Geology at the University of Arizona, then climaxed the evening with an excellent illustrated lecture on Grand Canyon National Park.

Dr. H. A. Scullen, Apiculturist at Oregon State University, was Moderator for the last session which was a panel discussion of the pollination of clover and vetch.

R. A. Hunt, Manager of Pacific Supply Corporation of Madras, Oregon, said that rental payments for bees in his area will be raised to $7 for Grade A colonies and $5 for Grade B colonies. Two contracts are drawn up—one for the beekeeper, the other for the grower. The first contains such items as time of moving into fields, colony strength, and field placements. The second necessitates the grower's protecting the bees from irrigation water, insecticides, and destructive animals.

It would appear that we are actually entering a new era in beekeeping. If, in the future, growers of legume seeds, fruits, and vegetables use the necessary number of colonies per acre to assure maximum production, the number of hives in the U.S. will have to be increased to meet the growing demand for bees.

Meeting of the Texas beekeepers on October 2 at College Station

XUM

A Talk to Beginners

By M. J. Deyell

December Is Here Again—So What?

If you will examine November and December issues of Gleanings just prior to 1934 you will not find "Talks". My predecessor, George S. Demuth, mentioned those two months as being part of the period of quiescence for bees, during which time beekeepers in this hemisphere are not, or should not be, manipulating colonies of bees.

However, there are readers of this magazine in 46 countries of the world, including some beekeepers in the southern hemisphere in countries like South Africa, Argentina, Australia, and New Zealand where the major honey flow is at its height during December and January.

A $64 Question

I have been asked recently by beekeepers outside of Ohio and somewhat farther south in U. S. A. why we do not tell them exactly what they should do in manipulating their hives each month of the year. One beekeeper suggested a calendar giving explicit directions for colony management each week. Apparently these beekeepers do not realize how weather and colony conditions vary in different sections of this country and the world. If they should make a trip around the world or even across the continent they might understand how utterly impossible it would be to carry out their suggestions. What I try to do is to emphasize the principles of beekeeping and then leave it up to the readers in various sections of this and other countries to apply those principles to weather and colony conditions as found in their particular part of the world.

Three Requirements for Bees

And, by the way, it may not be out of place even in December to repeat the three principles of beekeeping, or requirements for bees:

(1) **Protection**—a suitable home or hive in which the colony is to live.

(2) **Comb Space** — ample room inside the hive for building combs to be used for brood rearing and the storage of honey and pollen.

(3) **Ample Food**—an abundance of honey and pollen in each hive throughout the year to meet colony requirements.

Editor M. J. Deyell

Experience in Tucson, Arizona

It was my privilege and pleasure to attend the Pollination Conference in Tucson, Arizona, on October 24 to 26. A story of the Conference appears elsewhere in this issue. I talked with some commercial beekeepers near Tucson who said they were experiencing a rather late honey flow from cotton. The temperature was above 80 degrees each day I was there and weather conditions were favorable for nectar secretion. The honey was heavy —around 16 percent moisture content—and of excellent quality.

Dr. L. A. Carruth of the University of Arizona was kind enough to take me on a short tour of the city and to show me 20 colonies on top of the Agricultural Building. A picture of the apiary is shown on page 739. I tried to lift one end of some hives that were three and four stories high. It was difficult to budge them so I said to Dr. Carruth, "Say, do you have these hives nailed down?" He assured me with a broad smile that it was honey that held them down.

A Trip to California

I have a daughter living near San Francisco so I could not resist the temptation to fly on out to the Coast in order to spend a few days with her, as I had some vacation time coming. Our plane left Tucson about 6 p.m. just as the sun was about to slip over the horizon, a skyline of mountains in the distance. It was a magnificent sight, one that causes a strange feeling away down inside you. It made

me feel very small. I was speechless.

Fortunately the full moon appeared in the West after sundown and we could easily follow the contour of the country over which we passed.

Before reaching Phoenix one of the four engines—the one just opposite my front seat in the plane—refused to function properly. After landing in Phoenix two mechanics attempted to repair the engine but were unsuccessful. In due time the more than 50 passengers were transferred to another plane that was scheduled to fly to Los Angeles via San Diego.

Over the Pacific by Moonlight

That provided the opportunity of flying from San Deigo to Los Angeles by moonlight along the edge of the Pacific Ocean. In fact, we were above the ocean most of the journey. This unusual experience gave me the thrill of a lifetime.

I spent two days with cousins in Los Angeles before going on to San Francisco. One beautiful day my host drove me up into the mountains. As we rounded a sharp curve we spied two hives in a small clearing near the road. Naturally I had to do some investigating. I hefted the hives which were as light as a feather. On opening one of them I found a small cluster of bees that appeared to be very hungry. Apparently the dry weather had dried up nectar plants. Those bees will probably pass out before spring unless they are fed. I managed to get a picture of the hives.

According to the Honey Report of October 11, 1950, California is credited with having 451,000 colonies. These two hives are the only ones I saw in the state. Of course, California is a large and **wonderful** state. If you don't believe me, ask a Californian.

A Common Mistake in Beekeeping

I had thought of mentioning some mistakes made this past season but I find space running short. However, there is room for at least one. I wonder if any of you readers made the same mistake. I overestimated the size of my honey crop. It seems that a crop looks bigger in the hives than it does in the cans after being extracted. I have been told, and I now believe, that the best time to estimate the size of an extracted honey crop is after it is run into 60-pound cans.

Small apiary on a mountain near Los Angeles, California. Picture taken by Jack Deyell on October 28, 1950.

XUM

Editorials

Problems in Pollination Work As brought out by one of the speakers at the recent Tucson Pollination Conference, honey production and furnishing hives of bees for pollinating farm crops are two different businesses. Obviously they both involve the production of populous colonies for certain seasons of the year and this calls for expert apiary management. However, from there on they differ. The honey producer is interested in securing the maximum crop of honey and wax, while the beekeeper furnishing bees for pollination is or should be interested in placing good hives of bees at the proper time where they are needed for pollination in order that the growers may secure maximum yields from vegetables, fruits, and legumes. It is also necessary to remove the hives following the blooming period.

All of this moving means hard labor and manpower, as well as expense. It seems probable that suitable mechanical apparatus may soon be devised—perhaps a power crane mounted on the truck cab for lifting hives on and off trucks. Some commercial beekeepers have already devised types of hive lifters. Thus far, most of the lifters we have seen appear to involve so much man labor to make them function efficiently that their cost is not warranted by results attained. We predict, however, that one of these days some ingenious person will come out with a hive lifter so simple and efficient that those of us who have tried to think of an idea along this line will wonder why we hadn't thought of it first.

Then there is the problem of how much rental per hive the beekeepers should receive. Apparently it is difficult if not impossible to standardize this charge because of a variety of conditions. Some growers enter into what is called a share-the-crop plan with the beekeeper. For example, in medium red clover seed production in Ohio one plan consists of the grower getting the first bushel of seed, then dividing the amount above one bushel equally between the grower and the beekeeper. There are other share-the-crop plans, as found in the report of the Tucson Pollination Conference. In Ohio the average amount of medium red clover seed secured throughout the state in 1949 was only .07 bushels per acre. On this basis the beekeeper is not likely to make a profit unless he furnishes more than one colony per acre and conditions are unusually favorable for seed production.

In the share-the-crop plan there is also the problem of faulty seed harvesting in some areas. Unless extreme care is used in harvesting and threshing clover seed, much of it is lost. Some farmers are not concerned over getting all seed possible, so long as they get enough of an average amount. The beekeeper who has entered into the share-the-crop plan is naturally interested in salvaging every bit of seed available.

It will be interesting to watch future developments along this line. As brought out at the Tucson meeting, when more growers of agricultural crops needing pollination wake up to the importance of honey bees to increase yields, there is likely to be a dire shortage of bees. As a matter of fact, some growers in the West were unable to obtain the necessary bees this past season and are now planning to keep bees. It would be preferable for the beekeeper to furnish the bees necessary for pollination because of the specialized nature of beekeeping.

Higher Per-Colony Averages Needed Some years ago E. L. Sechrist, formerly with the Bee Culture Laboratory in Washington, D. C., and now living in California, made a survey among beekeepers throughout this country, obtaining data on the cost of producing honey. He arrived at the conclusion that it was necessary to secure at least 90 pounds per colony average in order to make a living margin of profit.

We know that the per-colony average among the majority of beekeepers in this area during the past decade has been considerably below 90 pounds. That may account, in part at least, for the fact that some beekeepers are finding it difficult to make ends meet and are considering selling their bees and taking up some other business.

Obviously this low per-colony average in the clover regions has been due to a reduced sweet clover acreage because of a change in farm crop rotation, resulting in more grains and less legumes, consequently poorer bee pastures.

Now that the need for more legumes to increase soil fertility is being recognized, and since it is planned to return 45 million acres to grasses in the near future, it seems probable that bee pasture may improve materially.

If, with better bee pasture, beekeepers will employ intelligent apiary management to reduce production costs to the minimum, it should be possible, with stabilized honey prices on an upward trend, for beekeepers to realize some profit from their bees.

Because of increasing costs of labor and material it is going to be increasingly necessary to reduce the cost of producing honey and to raise the per-colony average of surplus honey produced. This can and must be done if honey production is to be profitable.

Large Scale Honey Advertising Just recently we received from one of our readers a full page advertisement of honey taken from the Boston Sunday Herald. It was put out by the Jordan-Marsh Co., New England's largest store.

The ad lists 60 varieties of honey from 17 states and 10 foreign countries, Canada, England, Japan, Australia, France, Holland, Ireland, Mexico, Sweden, and Trinidad. The one-pound jars range in price from 60 cents to $1.50. This ad was cleverly gotten up and showed a man at the breakfast table about to spread some honey on a piece of toast just emerged from the electric toaster.

Of course, this ad will help to increase the demand for honey in New England. Other large stores on the eastern coast have had similar advertisements recently. The Jordan-Marsh Co. is to be commended for this eye-appealing honey advertisement. Such ads help to develop more consumer interest in honey—nature's oldest and choicest sweet.

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Since the foregoing was written we have received from Andre Prost, a New York City manufacturers' agent for foreign and domestic food specialties, a list of 68 honeys from here, there, and everywhere. The one-pound jars are featured from many of our states and 12 foreign countries. The prices range from 45 cents a pound for Catskill Mountains Buckwheat Honey to $2.25 for Mont-Jovet Chamonix Honey in a 15½-ounce jar.

Honey Production in Canada and U. S. We note from the Dominion Bureau of Statistics, Ottawa, Canada, as of October, 1950, that the estimated crop of honey in the Dominion of Canada for the present year is 30,707,000 pounds, which falls 7 percent below the 1949 crop of 33,204,000 pounds.

The per-colony average throughout the Dominion for 1949 was 66 pounds; for 1950 it is 61 pounds. The estimated number of colonies in Canada was 505,750 for 1949 and 505,950 for 1950.

The highest per-colony yield of surplus honey for 1950 occurred in Manitoba, with an average of 129 pounds; the lowest yield in New Brunswick of 29 pounds. In 1949 the highest per-colony yield of 130 pounds went to Saskatchewan. The average production per hive in Canada for the years 1935 to 1939 was 92 pounds, which is considerably above the 1950 average of 61 pounds.

In 1949 there were an estimated 25,800 beekeepers in Canada, whereas in 1950 there are 22,300.

According to the honey report of the U. S. Dept. of Agriculture as of October 11, 1950, the crop for this past season is estimated at 234,153,000 pounds which is 3 percent more than last year's crop. The per-colony average was 41.7 pounds for 1950; 40.6 pounds for 1949.

We Pay No Apiary Rentals For a number of years it has been customary for the majority of beekeepers to pay a cash rental to the owner of the land on which the apiary is located for the use of the site during the season. In some instances the owner of the land was paid in honey rather than money.

Because of this practice some farmers or landowners have come to believe that they are granting a favor to beekeepers by permitting them to place bees on their farms. As a mater of fact, the farmers

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should be paying the beekeepers for keeping bees on their farms. If it were not for the bees, farmers would secure much lower yields from certain fruits, legumes, and vegetables than they would without bees. Some farmers are beginning to realize this fact and are giving apiary locations free.

Up until last year The Root Company paid for most of its apiary locations except for a few that were near fruit orchards. When we decided that we were no longer willing to pay for apiary locations, it was necessary to write the owners of the land on which we had apiaries diplomatic letters explaining the value of bees as pollinators of farm crops. Practically all of the land owners were agreeable to the change.

The past season many of our bees were used for pollinating fruit orchards, medium red clover, and Ladino clover. The demand for bees almost exceeded the supply. It was necessary in most instances to remove the hives of bees from established apiaries, at least temporarily, to supply the growing demand for bees to put into fields of clover. When the farmers on whose land our bees were located actually became conscious of this demand for bees for pollination, they began to realize the value of bees to agriculture.

At present we pay no apiary rentals.

Pollination — Yes, But Let's Not Forget Honey

The importance of bees for pollinating farm crops has been known in a general way for some time but not until comparatively recently has agriculture begun to give due recognition to the honey bee as the most important insect for pollination.

It has been said that our industry may be entering the pollination era. Those who attended the recent Pollination Conference in Tucson, Arizona, reported more fully in this issue on page 738, realize more than ever before the dependence of agriculture on the honey bee for pollination to secure the maximum farm crops.

However, important as pollination may be, we must not lose sight of the fact that the business of producing honey, nature's oldest and most healthful sweet, is also important.

There is this to be said about honey production: During the years the technique of producing maximum crops as well as the equipment used has been developed to a high degree of proficiency.

During the past few years the demand for honey has slackened somewhat because of the abundance of sugar and other sweets on the market. Also, some of the honey plants, especially clovers, have almost disappeared in some areas, because of a change in crop rotation which has reduced the legume acreage drastically. This has resulted in small honey crops in clover areas and meagre profits for commercial beekeepers. In fact, some have quit beekeeping.

A new day for beekeeping appears to be dawning. Agronomists and soil conservationists now realize the importance of legumes. A large portion of our land—45 million acres—is now being turned into grasses. This should mean more and better pasture for bees. And if that is a fact more honey will be produced and sold in the near future than ever before.

We are far from reaching the saturation point in honey production. During years when we have a slight surplus it isn't a case of overproduction, but, rather, underconsumption. A little over one pound of honey for each man, woman, and child in this country per year doesn't sound like overproduction. We must put forth more effort in marketing our honey crop.

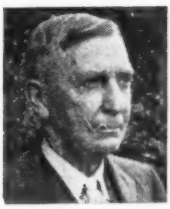
The American Honey Institute has been and is doing a marvelous job of publicizing the virtues of honey. The Institute is actually the beekeeper's best friend. But beekeepers should not expect the Institute to do for them what they can do for themselves. Beekeepers, large and small, should do all possible to create more consumer interest in honey and at the same time continue to give the American Honey Institute moral and financial support.

Yes, honey is a marvelous product. As yet we know comparatively little about its value as a food.

Even though pollination is important and essential let us never forget the importance of honey in this industry of ours.

From North, East, West and South

SOUTHERN CALIFORNIA, Nov. 3



Weather: Although the nights were cool during the month of October, many of the days were unusually warm. The general average maximum temperature was much higher than for October a year ago. Toward the end of the month a number of districts of Southern California had some good showers of rain. In this region, however, there was no moisture in October.

Market: The honey market still keeps active and the prices firm. The orange honey is pretty well cleaned up. For alfalfa, sage, and buckwheat honey, buyers are paying from 9 to 10½ cents. Beeswax is in good demand with prices paid somewhat higher than our last report. Light yellow wax is bringing as much as 47 cents to the producer.

Condition of Plants: Because of the continued dry weather the wild plants are in poor condition. Of course, irrigated trees and plants are in good condition and will continue that way. Where water supplies are getting short, water is being brought from the Colorado River by means of the Metropolitan Aqueduct. There are increasing demands for water from the Aqueduct. At the present time Orange County is seeking water from that source.

Condition of Bees: Bees in the Imperial Valley are in extra good condition. There was an excellent flow of nectar in many of the alfalfa fields, so besides a fine yield of honey the bees were left very strong. But in other parts of Southern California the bees are not so strong. The dry weather is much to blame for this condition as the wild plants dried up early. Some of the colonies taken to the San Joaquin Valley for pollination purposes were lighter at the close of the alfalfa flow than in the beginning. This will probably mean feeding during the winter months.

Miscellaneous: The very important subject "Pollination" was certainly thoroughly discussed at the Sixth Annual Pollination Conference held in Tucson, Arizona, October 24, 25, and 26. With beekeepers, farmers, and specialists present from all over the United States, much definite knowledge must have been gained by the large group who gathered for this conference. Southern California was well represented at the meetings.

The Sixty-First Annual Convention of the California State Beekeepers will be held in San Diego on December 5, 6, and 7. This will undoubtedly be of interest to the beekeepers and many will attend. —L. L. Andrews, Corona, California.

NORTHERN CALIFORNIA, via Lihue, Kauai, Hawaii, October 26

Weather: I am in the land where weather is made, not to order, but by the winds, mountains, sun, and moisture-laden atmosphere. One spot on this island receives some 600 (yes, six hundred) inches of rain annually while in other areas it is relatively dry. Not long ago, 24 inches of rain fell in 16 hours, causing a destructive flood, with the loss of lives. Yesterday I left Kauai Inn in a light rain, passed through a heavy rain storm and wind going over a ridge, and came out in sunshine, all in the space of 25 miles. This is the rainy season in Hawaii and yet the bees are busy gathering nectar, or robbing, according to the weather and the location of the hives.

Condition of Colonies: I have visited six of the seven islands here in the Territory of Hawaii and have found the colonies in sub-standard strength when judged by mainland standards. However, I looked through some colonies today which were in excellent condition, filling two or three stories to overflowing, and working toward another extraction before the end of their season. The condition of the combs is uni-

formly bad, being generally unwired, irregular, and with a large percentage of drone cells. Many super and brood combs are drawn anew each year from starters or from a ridge of comb left on the top bars after the honey was "cut" or "taken". The bees are inbred, some black, some excellent Italian strains, and many are hybrids. Some colonies are gentle while others attack fiercely and are hard to control by the usual methods.

The Honey Crop: Yields run from an average of 60 to 180 or better per colony in the better locations on the different islands. A normal crop to many producers is around a case of honey per colony. The honey runs from water-white to dark amber, depending on the source. The major source, of course, is the Kiawe or algaroba which grows in coastal areas. This honey is water-white to white in the pure state, without the admixture of other floral sources. It is a good table honey, mild in flavor, and granulates quickly with a fine texture. It is equivalent to a good grade of lima bean, cotton, or blue curls honey produced in California. Its water content depends on the area in which it is produced, how the honey is "taken", time of day in relation to the incoming nectar, and other factors common to high humidity areas in the States. It must be extracted at intervals of from three to four weeks or it will granulate in the comb. This is given as one reason why the combs are not wired. Honey is packed in 60-pound tins and wood cases.

Marketing: In marketing honey, the average beekeeper in these islands is behind the eight-ball more than the beekeepers on the mainland because of the cost of his containers and transportation to marketing centers. A cost of three cents a pound for containers and marketing is a general rule. Some sell direct to buyers on the mainland, while others sell through agencies in Honolulu, San Francisco, or New York. Present offers have been under the support price, delivered to mainland points. Subtract three cents from six, seven, eight, or nine and see how much is left for labor, depreciation, and returns on the investment. Those who sell direct to some processors, without credits being arranged for in advance, state that something frequently "happens" to their honey by the time it reaches the docks on the mainland to make it "not up to sample", or "off-grade", necessitating a reduction of one-half cent or so per pound. Even beeswax seems to pick up "dirt" in some cases.

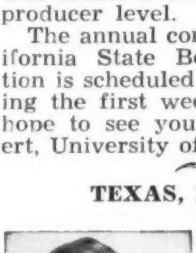
My advice to beekeepers here, and elsewhere, is to produce a good quality of honey, 20 percent or below in moisture content, and to sell to dependable buyers according to sample or by certification of the quality and grade, with payment to be made on delivery of the shipping receipts at specified banks. If this is done, then both the buyer and the producer will be protected.

Miscellaneous: I have seen some beautiful beeswax produced here by rather crude methods. Many of the beekeepers made their own foundation and some of the sheets are rather heavy. Considerable wax is thrown away in the slumgum from sun wax melters.

Thousands of acres of sugar cane are grown on four of the islands, producing 16 tons of sugar per acre, more or less. With sugar production highly mechanized, in the field and factory, honey can not compete as a sweet. It must sell on its own special merits of high food value and special physical properties required in the baking industry. Producers and buyers must get together for the best interests of the industry and at a price which will create a strong position at the producer level.

The annual convention of the California State Beekeepers' Association is scheduled for San Diego during the first week in December. I hope to see you there.—J. E. Eckert, University of California, Davis.

TEXAS, November 6



Weather: The weather during October was generally mild with cool nights and unusually warm day temperatures. Rainfall remained below normal with few areas receiving rainfall of any consequence, and as a result soil moisture is becoming increasingly scarce.

Bees and Honey Plants: Bees obtained fair supplies of pollen and some nectar from broomweed, asters, goldenrod, and bitterweed until the fall bloom was cut short by dry weather. Brood rearing continued fairly active and colonies are assured of plenty of young bees for winter. Winter stores are adequate except where colonies were extracted too close late in the season. As a whole, colonies are in normal but less favorable condition than they were a year ago. Most migratory colonies are now in their winter locations. Dry weather has interfered seriously with fall seeding of legumes, particularly hairy vetch, and also sweet clover in the southern portion of Texas while clover is usually seeded in late winter in the northern portion.

Market: Honey continues to move fairly well in the retail market and prices remain steady. Supplies of comb are becoming scarce.

Miscellaneous: According to the October report of the U.S.D.A. Bureau of Agricultural Economics, the current year's honey crop for Texas is estimated at 15,850,000 pounds with an average yield of 50 pounds per colony. This exceeds by a fair margin the earlier record crop of 1949. The same agency reports the current year's production of hairy vetch seed for Texas at 11,000,000 pounds which is exceeded only by Oregon and Oklahoma. Sweet clover seed production is estimated at 18,900,000 pounds for Texas, which is 31 percent of the total U. S. production. Texas beekeepers, however, do not view the legume seed outlook for the coming year with too much optimism. With restrictions lifted on cotton acreage a record planting of cotton is expected in 1951 with a consequent smaller acreage of sweet clover and reduction in bee pasture for the coming year.

The Texas Beekeepers' Association held its annual meeting at College Station on October 2 and 3. Insecticidal poisoning of bees, pollination, and bee diseases were the principal topics of the program. A new constitution of the Association was adopted. Officers elected for the coming year are: F. E. Jackson, Cameron, President; G. O. Stroope, Waxahachie, Vice-President; L. A. M. Barnette, Bellaire, Secretary-Treasurer; and C. C. Hansen, Meridian, Executive Member and Delegate.

We regret to learn of the recent death of Mrs. R. C. King of Wharton. The Kings operated an extensive bee business in the middle coastal area for many years. After the passing of Mr. King more than a decade ago Mrs. King became perhaps the most active woman beekeeper in Texas. She was assisted, however, by a son Clifford who continues to operate a sizeable bee business.

A number of Texas beekeepers attended the Sixth Annual Pollination Conference of the National Beekeeping Federation at Tucson, Arizona, on October 24, 25, and 26. —A. H. Alex, College Station, Tex.

IOWA, November 8

The end of the season is here and it is possible to evaluate the results of 1950. The Federal Crop Reports indicate a slight increase in the production of honey for this state which is the result of a slight increase in the number of colonies operated and a slight increase in the yield per colony. This will come as a surprise to the beekeepers of some localities who have complained of a short crop this year. It is interesting that these complaints come from areas where a good crop was enjoyed in 1949 and 1948. In some areas the beekeepers report a good crop which is good by comparison with the 1949 and 1948 crops. So local conditions have varied over the state.

Weather: The colony condition over the state is generally good. There was not too much fall flow but the good weather which prevailed late in the season gave the beekeepers an excellent opportunity to get colonies in good condition for wintering. There are many operators who will depend on package bees and who are not interested in colony conditions at the end of the fall season. Those colonies which were not in good condition were largely found among the colonies which were used for pollination purposes. This condition came somewhat as a surprise to the operators who had their first expe-

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rience with pollination efforts this year. Such condition is to be expected and is taken as a part of the cost of using colonies for pollination purposes by the operators who have had some experience. It can be said that there is a reduction in the number of colonies going into winter in the hands of operators who usually practice wintering.

Demand for Bees: This indicates that there has been more than the usual amount of interest in Iowa for the use of bees for increasing legume seed production this year. Farmers became more interested in legume seed production, first, because they had more land in legumes as a result of the corn acreage allotments. Second, they were mindful of the high price of the legume seed during the last few years. The demand for bees exceeded the supply. This resulted first in the use of less than the recommended number of colonies per acre for effective pollination. Third, it resulted in moves of considerable distances—in a few instances too far to be practical. In one instance a move was made into a territory where disease was found to be present after a preliminary survey had indicated the territory was clean. This matter of disease pick-up is going to be a big factor for the beekeeper to consider when offering his bees for pollination purposes.

Legume Seed Production: There was no uniformity this year in the arrangements which were developed between the seed producer and the beekeeper. The results are not entirely satisfactory to either the seed producer or the beekeeper. There seemed to be a feeling on the part of the seed producer that if bees were available in any quantity whatsover, there would be a perceptible increase in the amount of seed harvested. This regardless of other factors which were known to have a big influence on seed set, such as the management of the crop, pest control, and harvesting. Too much reliance was placed on the mere presence of bees for seed production. Poor harvesting methods still remain the big factor in recovering the seed which is set as a result of other practices.

As the situation now stands, there are many who attempted to produce a seed crop this year who will not be interested in repeating the operation next year. There are many beekeepers who used their bees for pollination purposes who will not be interested another year since they have found that the returns are considerably below expectations.

This all points to the necessity of a more understanding approach to the problem of legume seed production by both the seed producer and the beekeeper. There is still a lot of hard work involved in legume seed production for both the seed producer and the beekeeper.

Honey Market: The honey market is reported to be better than a year ago. However, there is some question as to the real situation. Honey is moving slowly and at a price which is wholly unsatisfactory and not in keeping with the costs of production, either for beekeepers or the cost of living which is general across the board. With workers receiving substantial raises for their labor and prices going up correspondingly it is rather discouraging for the beekeeper to have to sell his honey at a price level which was established a year or two ago. It is becoming increasingly difficult to obtain labor to help in beekeeping operations. Such labor as is available is unsatisfactory and the price is very high. The cost of other items, such as containers, has increased materially. The beekeeper at the present time is in the squeeze.

This brings up the matter of future operations. Many of the sideline producers are offering their bees for sale. In fact, there are some of the larger producers who would be glad to dispose of their holdings if it were possible. There is little incentive for people outside of beekeeping to become interested in the industry. With the probable continued price rise of labor and materials and a questionable future for the honey market, the beekeeper is justified in considering very carefully the extent of his operations for 1951. The success of 1951 operations will depend upon the efficiency of operation. There is plenty of opportunity yet for honey producers to increase their unit production. This means shifting the emphasis from extensive production to intensive production. It must be evident in the near future that the profit comes not from operating bottom boards but from operating supers.—F. B. Paddock, Ames, Ia.

PENNSYLVANIA, November 11

Weather and Crop Conditions: Pennsylvania beekeeping has suffered from a cold wet fall which followed after the disappointment of a cold and wet summer. This adverse weather reduced the clover honey crop to less than half of normal, and the buckwheat to a very short crop. The fall honey flow provided no surplus in Southern Pennsylvania. Because of the short flow, considerable fall feeding will have to be done to bring all colonies safely through the winter. A similar condition was reported in Northern West Virginia by one of the larger beekeepers who visited us during the latter part of October. Quite a number of beekeepers have already started feeding.

A fair surplus was reported from goldenrod in Northern Pennsylvania and a small surplus from wild asters in the same area. The flow stopped about September 12, which is 10 days before the flow ends normally.

Most colonies are strong but brood rearing stopped early this fall, partly because of lack of nectar and pollen, and partly because of unseasonably cold wet weather.

The weather turned warm in late October and early November, causing the bees to rear brood extensively, especially in Southern Pennsylvania. This late brood rearing (early November) has built colonies to exceptional strength and further depleted food supplies. It looks now as though many colonies are destined to die of starvation before spring.

Honey sales have been fairly good, though somewhat spotted. The demand for comb honey continues quite heavy. This unusual demand is at least partly due to the short crop. Comb honey, especially light comb honey, has been selling very well since the war. A number of beekeepers have been shifting colonies from extracted to comb honey production, but most of Pennsylvania is a poor comb honey area, due largely to the occasional offseason such as we have had this year.

The price of honey remains unchanged, but there seems to be a trend towards slightly higher prices for comb and light extracted honey.

Miscellaneous: It is just 30 years since this writer, still a freshman in college, began the teaching of beekeeping at the Pennsylvania State College in February, 1921. The subject of beekeeping was not taught here at that time and all details of the new course had to be marked out. Since then the work has expanded so that there is now an extension representative at the college, a research program, a course for college students, and two short courses for beekeepers. It is sincerely hoped that the work will continue to expand during the next 30 years.

The pollination conference at Tucson proved to be of high quality and showed that some first class work is being done along this line in the West. The great increase in seed production reported there was surprising. The weather man gave those attending the conference a taste of real desert weather which included dust, heat, and sunshine. Another surprise was to find an abundance of bees working on small yellow flowers in desert areas where no trace of farm life could be seen.—E. J. Anderson, State College, Pennsylvania.

MISSOURI, November 1

Weather: During the past season we experienced some of the most unusual weather in our beekeeping career. October was hot and dry. Temperature ranged up to the 90's on many days. In contrast, July and August, normally our hot and dry months, were cool and wet. We had days in July when the temperature did not go above 70 during the daytime. In opening hives on these days, covers, and all, made the popping noise heard in early spring and fall.

Honey Crop: We have never failed to harvest a fair-to-good crop of fall honey, but this is one year when it is almost nil.

The condition of bees and stores on September 1 was at a low ebb. Very little stores remained in the hives and the population consisted of old bees, but it is remarkable what a few weeks of good bee weather will do. During the greater part of September there was a

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heavy flow from heartsease, this heartsease growing in wheat stubble fields. Because of 2,4-D, there was again no heartsease to be found in the corn fields.

Bees were able to store enough honey from this for winter stores and are going into winter quarters with strong clusters of young bees.

A fair crop of good quality clover honey was harvested by most beekeepers. Where a beekeeper failed to secure a clover crop it was either due to too much rain in some sections of the state, poor management of bees, or in some instances a heavy infestation of European foulbrood.

Miscellaneous: One of the musts in our beekeeping is requeening, and the article by Howard J. Rock in September Gleanings on queen introduction is one of the best we have read on this subject. Our own experience has been along the same lines as Mr. Rock's. No doubt natural supersedure will rear the best queens, but we find that this can be extended over too long a period. To wit: We had one particular yard that was outstanding from 1945 to 1949 inclusive in the average yield per colony as compared with other yards, so we did very little requeening in this yard during those years. In the spring of 1950 12 colonies broke down with European foulbrood. We had noticed that some of these queens had turned darker because of mating with black drones. We still have a lot of wild bees in the timber lining the bluffs of the Missouri River.

Had we requeened systematically as we did in the other yards, the chances are that European foulbrood would not have gotten a foothold in this yard. It was our first experience with EFB.

We raise our queens from good Italian stock. Those 12 colonies did not produce any surplus this year. So with us it is necessary to be constantly requeening as the condition of each colony warrants it. We have been very successful in raising queens by the Dr. C. C. Miller method, and also using a hive divided into three compartments for mating queens. These hives are set on the ground. The loss of virgins going out to mate is very small, on the average not more than five percent.

Most of our introduction is by the cage method. If the queen-colony balance is there, no loss of queens will result. To a limited extent, nucleus introduction by the newspaper method is also used. — Carl Kalthoff, Lexington, Mo.

NEW JERSEY, November 13

Weather: Lack of cooperation by the weather this season has resulted in a small amount of surplus honey for the New Jersey beekeeper. When sumac bloomed, which is of considerable importance as a source of nectar in some parts of the state, the weather was unfavorable for bee flight most of the time. This condition again prevailed when goldenrod and aster bloomed.

Market: The movement of honey is about normal for this season of the year. For the most part the beekeeper-bottler is trying to maintain prices but is meeting stiff competition from out-of-state honey offered at low prices.

Bee Conditions: Because of a brood malady of undetermined cause occurring during the summer, many colonies are not as strong numerically as could be desired. Further, many beekeepers extracted early in the season in anticipation of a fall flow to provide winter stores. It didn't come. Therefore, unless considerable feeding is done and a close watch is kept on stores, many colonies will starve this winter. During the past 20 years there has been a radical change in the state regarding the possibility of a surplus crop of honey. In fact, there now is but one cultivated crop of importance for surplus honey. That is lima beans grown for freezing.

Due to the fact that clover plants are best for animal feeding just as blossoming starts, and the use of high-powered farm machinery in gathering hay, there is absolutely no opportunity for bees to gather nectar from that plant.

At one time buckwheat was quite extensively grown in the state and was good for at least one comb honey super from an ordinary colony of bees. There is practically none grown now.

The situation is made more unfavorable by the mania for the use of herbicides, further reducing the possibility of securing a surplus crop of honey since uncultivated plants are now a major source of nectar.—Elmer G. Carr, Pennington, New Jersey.

ONTARIO, September 10

Condition of Bees: The bees are all packed away till the spring of 1951, and except for occasional casual visits during the winter we may not see them again until next April. If there is sufficient snow to partially or wholly cover the winter cases and thus prevent icing up of entrances in the event of a sleet storm, we frequently do not go near them during the entire winter.

Speaking of snow, we have a yard on a level spot on the side of a hill facing south. The crest of the hill is 40 or 50 feet higher than the bee yard, and the prevailing northwest winds carry the snow over the crest and deposit it right in the yard. One winter a few years ago we had an excessive amount of snow and the yard became buried. In fact, the neighborhood children were skiing over the yard all winter. In March I decided to dig them out and clear the entrances, but couldn't decide where to commence excavating. I finally located a hive and dug down to it. Standing on top of the winter case I could just look over the edge of the hole I had dug. There were actually ten feet of snow on parts of the yard. I decided it was a hopeless task to attempt to remove it, so decided to let the sun do it. That yard wintered 100 percent. I have on other occasions seen colonies winter under deep snow without any other protection.

Weather: We are enjoying seasonable November weather. Cool crisp days and frosty nights. Some light snow has fallen, but has disappeared again. Earlier rains have left the soil well filled with moisture which will start growth under good conditions in the spring. The deer hunting season is in full swing, and quite a number of beekeepers take advantage of it for an annual holiday following the wind-up of the apiary season. We are fortunate in having a large Government game sanctuary about 25 miles away, and game migrates to nearby sections of the county and provides good shooting. Quite a number of folks from the U.S. come over for the annual shoot, and yesterday I saw an Ohio car going down the street with three deer and a bear on the fenders and roof.

Market: In previous issues I mentioned the honey marketing plan then under consideration by Ontario beekeepers. This has been voted on by the beekeepers and has received their approval and will shortly become operative. The plan briefly is this: On the statute books of Ontario is an act entitled "The Farm Products Marketing Act, 1946". Under this legislation any group of agricultural producers may apply to the Provincial Government to set up a marketing plan to regulate the sale of, and set minimum prices on, that product.

In the case of honey, the plan does not apply to a beekeeper operating less than 10 colonies of bees. The remainder—those eligible to vote—were obliged to obtain a two-thirds majority or 66⅔ percent of the total ballots in order for the plan to become operative. Ballots not returned were counted as "No" votes. Good organizational work by the Ontario Beekeepers' Association resulted in the largest percentage of votes cast of any similar plan so far voted on by any group of agricultural producers in the province. The beekeepers indicated by a 75-percent "Yes" vote that they were in favor. An interim board to administer the plan has been appointed until a permanent board is elected by the beekeepers themselves.

The plan places no marketing restrictions on producers with less than 10 colonies, nor to **any** producer selling direct to the consumer or to a retail store. Sales to a wholesaler, however, must be made at the minimum price set by the board. The raising and stabilizing of the wholesale price is expected to have a similar effect on the whole price structure right down the line, and should guarantee the producer a living return for his honey.

(Continued on page 764)

XUM

Asked and Answered

Scorched Honey Not Suitable for Winter Stores

Question: I have some scorched honey from heating too much. Would it be advisable to use this for fall feed for colonies light of stores?—H. C. Achtenhagen, Ill.

Answer: It would be inadvisable to use scorched honey as a bee food for winter stores. It would be preferable to feed sugar syrup. Scorched honey might cause dysentery among the bees.

Wants to Take Bees Out of Houses

Question: I wonder if you could tell me how I could get people to call on me if they find bees in their houses, or in a tree or if they find a swarm in a tree.—Sam Creech, Ill.

Answer: One way to have people get in touch with you regarding bees is to insert a small ad in your local paper announcing the fact that you are equipped to remove swarms from dwelling houses and bee trees. There is a beekeeper in Cleveland, Ohio, who has built up quite a business hiving swarms he has taken from trees and houses.

Protecting Inside of Honey Extractor During Winter Months

Question: What is the best way to protect the inside of the extractor from rust during winter?—A.W.Y., Conn.

Answer: After the last extracting of the year some beekeepers let the extractor and the parts drain but do not wash all of the honey off the parts. That is, after they are through extracting for the last time, they set the extractor where it can drain and then cover it for the winter. This leaves a light coating of honey on all interior parts of the extractor and then the next year when they are ready to extract again, they can clean the parts of the extractor thoroughly and the machine is ready to use.

Rearing a Few Queens

Question: How can I get daughters from a good queen without going into the trouble of the commercial type of queen rearing?—Arthur Holzweissig, Calif.

Answer: A good method advocated by Mell Pritchard for rearing one's own queens is as follows: Select a very strong colony of bees, preferably hybrids, and remove their queen. Feed them one pint of thin syrup a day, unless there is a good honey flow at the time. Three days later go to the colony containing your best queen and remove a frame containing no brood. Then move part of the frames over, leaving a space in the center of the brood nest. In this space insert an empty drawn comb that is clean and bright. Six days after making the first colony queenless, destroy all of their queen cells and give them from the Italian colony this frame which should contain eggs at this time. In the part of this comb where the eggs are laid, cut out two horizontal strips of comb about one inch wide. Along the tops of the spaces thus made the bees will build nice straight queen cells.

On the eighth day after this colony has received the comb, remove the queens from all of the colonies to be requeened. Two days later carefully cut out the queen cells from the prepared comb and place them in spiral cell protectors and distribute to the queenless colonies, hanging each cell in the center of the brood nest where it will be kept warm. These virgins should hatch in about four days. Five to eight days later they will leave the hive and mate while flying. They will be found laying in 12 or 15 days.

Using Carbon Bisulphide

Question: If I use carbon bisulphide to kill moths will the honey be good for human consumption and is it good for brood rearing in the spring?—P. Ferris, N. Y.

Answer: Carbon bisulphide, when used to destroy moths in combs of honey or in comb honey sections, will not make the honey unfit for human consumption. After the moths have been destroyed the combs should be aired thoroughly, especially comb honey sections, before being used.

Painting Queens

Question: Can you give me some information on queen painting? I think it would save considerable time in locating the queen if they were colored.—Ralph Haist, Toronto, Ont.

Answer: To mark a queen with paint, use yellow or red lacquer applied with a fine camel's hair brush or a sharp pointed piece of wood. Apply a very small amount of paint to the back or shield of the queen bee, being careful not to spread it over the body of the queen. The lacquer dries quickly, and the queen can thus be found very easily.

Sales Tales

By T. J. Paisley

In this year of 1950 when the honey crop may be as large as 245 million pounds, it is wise to consider the best methods for the promotion and selling of your honey crop. As the majority of the beekeepers to whom we are talking are not large honey producers, we shall again consider some of the essentials necessary in selling your own honey.

All reports indicate that the sale of comb honey this year has been very good. Good comb honey has moved from the roadside stand and the small stores at a fair price. The demand for comb honey has been good. The most essential single selling feature that can distinguish your package of comb honey from that of any other beekeeper is cleanliness. Well scraped sections have a much higher value than do travel-stained unscraped combs. After successfully completing all of the operations necessary to produce comb honey, don't stop short of increasing your own sales volume by merely packaging unscraped sections and marketing them.

This year the crop of extracted honey has been much better from the standpoint of quality than has been noticeable for the past few years. Many letters which we have received have stated that the honey crop was the best that this or that beekeeper had seen for many years. The samples of honey which I have seen also proves this is true.

What effect should more higher quality honey have on the difficulties involved in selling your crop? First of all, the honey which will be marketed through store outlets should be lighter in color than usual and will be honey possessing good body and flavor. It will be essential for each beekeeper, even if he is only packing three or four hundred pounds of honey, to pack the finest blend that is possible for him to do. Smaller beekeepers should investigate the possibilities of purchasing several cans of water-white honey to blend with new small amounts of fall honey which they intend to pack. The improved quality both in color and flavor of your package will more than offset the cost of purchasing some lighter-colored and flavored honey.

We have noticed that through the national advertising done by Sioux Bee and Lake Shore Honey there has been a greater demand for the lighter-colored and milder-flavored honeys. This demand for milder honey is also an outgrowth of the consumer's being gypped during the war period by the purchasing of very strong-flavored South American honeys.

There's a most important warning which each beekeeper should remember. We have heard from various sections of the country of honey buyers who have been attempting to purchase honey at prices way below the 9 cents offered by the Government Price Support Program. It is unnecessary for any beekeeper to sell honey at less than 9 cents. Honey packers and bottlers, whether they are participating in the Government Program or not, should be able to pay this 9-cent minimum. The beekeeper who sells his honey for 7 or 7½ cents this year is not only foolishly throwing away money which he should put in his own pocket, but he is also greatly decreasing the chances of a higher honey price for all beekeepers. The marketing of honey is an extremely competitive operation and any packer who is in a position to market 7-cent honey naturally drives the price down for all producers.

There has been a much firmer honey market this year than in the the past. I believe it is due more to the large quantities of honey sold in foreign countries than to the honey support program. No matter what the reason for the firmer price is, no beekeeper should take less than 9 cents for his honey.

Siftings

"Bees probably begin work on new combs more quickly if they are placed near the brood chamber. In rapid honey flows, however, bees go readily to the very top of the hive for empty cells without hesitation. In any event, plenty of drawn combs should be available and given to colonies soon enough so that there will always be some empty comb in the hive."—Dr. E. F. Phillips in "Beekeeping".

XUM

Just News

A one-day meeting of the **Ohio State Beekeepers' Association** is scheduled for December 13 in Hearing Room No. 3 at State Office Building, Columbus.

* * * * *

The annual winter meeting of The Massachusetts Federation of Beekeepers' Associations will be held in conjunction with the Union Agricultural Meetings to be held on January 11, 1951, at Memorial Auditorium in Worcester, Massachusetts. The principal speaker on the all-day program will be Dr. W. E. Dunham, Research Professor at Ohio State University, Columbus, Ohio, who will speak on the "Two Queen System of Beekeeping". All beekeepers and interested people are invited to attend.—Wallace R. Parker, Sec.

* * * * *

The Cook-DuPage County (Illinois) Beekeepers' Association is sponsoring a two-day meeting and short course in cooperation with the University of Illinois on February 9 and 10, 1951. Plans are under way to secure outstanding speakers. This will be one of the largest meetings ever held in Chicago at the Museum of Science and Industry, Chicago University. Beekeepers from nearby states are cordially invited to attend. At the November meeting of the Cook-DuPage Beekeepers' Association the following officers were elected for the year beginning February, 1951: A. Carm, Chicago, President; John Lis, Des Plaines, Vice-President; A. J. Smith, Worth, Secretary.

* * * * *

The California State Beekeepers' Association will hold its annual convention at the U. S. Grant Hotel, San Diego, California, on December 5, 6, and 7. The highlights of the meeting will be Marketing and Pollination.—H. J. Crawford, Pres.

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The Allegheny County (Pennsylvania) Beekeepers' Association will hold its annual meeting in the Downtown YMCA, Pittsburgh, at 7:30 p.m., December 11, 1950. An interesting and instructive meeting is promised.—A. R. Dean, Sec.

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The Westchester County Beekeepers' Association will hold its annual Christmas meeting and party on Sunday afternoon, December 17, at 2:30 p.m. at the Odd Fellows Hall, 20 Lockwood Avenue, New Rochelle, New York. Santa Claus will be on hand to distribute gifts to all present. Bring the children.—A. M. Barnes, Publicity.

* * * * *

The first carload of food from New York State to be included in the 50 cars making up a Friendship Train sponsored by Christian Rural Overseas Program was a railroad car of 36,000 pounds of honey, dedicated at the plant of the Finger Lakes Honey Producers Co-op., Inc., in Groton on October 10. The Co-operative served as an assembly point for individual contributions of honey, but the major part of the carload was purchased by CROP from Finger Lakes. The food goes to institutions sponsored by the churches abroad to feed people who are not cared for under the Marshall Plan. The present shipment will go to Germany where it will be distributed by three church agencies representing all denominations. — William L. Coggshall, Ass't. Prof. of Apiculture, Cornell Univ.

* * * * *

Abdel Rahim, the Egyptian Army Lieutenant who won the English Channel race in August, consumed in mid-channel five cups of tea and coffee, two cheese sandwiches, a pear, and a pound of honey. He was in the water, in all, 10 hours and 53 minutes.

* * * * *

A very successful banquet was held by the **Lorain County (Ohio) Beekeepers' Association** in Wellington, Ohio, on Saturday evening, November 11. Well over 100 beekeepers turned out for this annual occasion. A fine chicken dinner put everyone in good spirits. The after-dinner program consisted of some local talent acts on the stage which were enjoyed by everyone. Jere Frazer of the G. B. Lewis Co. acted as Master of Ceremonies. Carl Deeds, the Lorain County Agent, and Bill Brown of The A. I. Root Co., were called upon for a few remarks. The Lorain County Beekeepers' Association has reason to

be proud of the attendance at their annual banquet and also of the fact that the Association is growing, and that optimism reigns for 1951 in spite of the fact that 1950 was not generally a successful season for Lorain County beekeepers.

* * * * *

The Florida State Beekeepers' Association held its 30th Annual Meeting on October 30 and 31 at West Palm Beach. The two-day meeting reflected the splendid organization work done by the President, F. C. Markham, and his able assistants. John D. Haynie, Apiculturist, of Gainesville, led a very helpful discussion on requeening. The new officers for the ensuing year are as follows: C. Wade of Tampa, President; Oren Davis of Gainesville, Vice-President; and Phil Packard of Video, Secretary-Treasurer.

* * * * *

Fire destroyed the honey extracting plant of the E. H. Harrington Co. at Beemer, Nebraska. The large frame building which was comparatively new, as well as 20,000 pounds of honey, 3000 supers, extractors, and all other equipment in the building, and a truck, were burned. Water had little effect on the burning beeswax which burned fiercely and with intense heat. The loss is estimated at $15,000. . It is only partially covered by insurance. The entire 1950 crop is gone. — J. H. Sturdevant, St. Paul, Nebraska.

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The Illinois State Beekeepers' Association meeting, held in Springfield, Illinois, on November 10 and 11, while not overly well attended, was worthwhile.

G. H. Cale, Editor of The American Bee Journal, mentioned some changes in our industry. Pollination is now taking the spotlight. If beekeepers fail to provide bees for pollination some growers may go into beekeeping and this might result in complexities.

Carl E. Killion, State Apiarist gave an encouraging report. Brood diseases decreased from 2.3 percent in 1949 to 2.1 percent for 1950. The number of colonies in Illinois has decreased from 242,000 in 1947 to 184,000 in 1950. That isn't so good for our industry and is due to the lack of honey plants and bee poisoning from insecticides.

Art Kehl of the G. B. Lewis Co., in his talk "This Business of Beekeeping" emphasized the fact that with intelligent apiary management production costs can and must be kept down to the minimum. And in selling honey we must make it easy for the customer to buy.

Henry C. Dadant, in telling about "That New Bee", made it plain that a knowledge of genetics is necessary for bee breeding. The task is not developing new characteristics in bees but selecting the best from what we have.

Dr. V. G. Milum gave an interesting talk on "The Mind of the Bee" in which he reviewed a recent book by a French writer. Bees do remember and can reorient themselves quite easily when moved to a new location. Bees that do the joy dance are old bees and those that do grooming dances are young bees.

Leonard J. Robbins brought us helpful information on "Red Clover Pollination". It is necessary to make a start early in the season to plan for pollination. Let the farmer make the first move. If sweet clover is present bees may not work red clover. Mr. Robbins secured a cash rental of $8 per colony. Four bushels per acre was the highest yield. Much seed is lost through faulty methods of harvesting.

The officers for 1951 are: Ralph Klebes, St. Charles, President; Wesley Osborn, Hillsboro, Treasurer; and Hoyt Taylor, Pleasant Plains, Secretary.—M. J. Deyell.

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Pennsylvania State Beekeepers' Association will hold its 48th Annual Meeting in Harrisburg on January 9 and 10, 1951, in Main Show Building, Room E. A worthwhile program has been planned featuring prominent beekeeping authorities.

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The American Beekeeping Federation annual meeting will be held in Denver, Colorado, January 31 to February 2, 1951, at the Cosmopolitan Hotel. Emphasis will be placed on three things: organization, marketing, and pollination. The Apiary Inspectors, standing committees, and Board of Directors will meet ahead of the regular sessions. The full program will appear in the January issue of Gleanings. **Your** future will be discussed and **you** should be there.

XUM

65 Degrees Below Zero and Bees Are Still Alive

By Victor Thiel, Elmworth, Alberta, Canada

Some of my fellow beekeepers may be interested in knowing how bees can endure the extreme cold of the Far North. Our farm is located in Peace River Country of Northern Alberta, Canada, some 300 miles northwest of Edmonton. I have kept bees as a sideline to mixed farming since 1939, on an average about 12 or 15 hives. During 1949 I had only six hives. I had the misfortune to be ill in the fall and was compelled to stay in bed. As a consequence I was forced to neglect my bees completely.

Today, Jan. 24, 1950, they are still uncovered on their summer stands with the bottom entrance open and a center one-inch round opening. There is not even any paper wrapping around the hives which are two stories high. They were crowded with bees in the late fall and had good queens and the top box completely filled with clover honey.

I usually pack my bees around November 1 in straw-tarred paper packs, with three or four inches of straw on the sides and 10 inches top packing, with a two by one-half-inch top entrance. We had very nice weather until early in December. After December 15 we got our present cold spell and it is still with us without a sign of a let-up. Two or three times during January I tried to listen from the outside to see if I could hear the bees. There was hardly any audible hum, but enough to show that they are still alive. Yesterday it was extremely cold—about 57 degrees below zero in the afternoon—and I decided to open the top cover of the weakest hive because the hum was so weak that I did not expect to find more than a handful of bees. To my surprise I found a healthy big cluster of bees and the inside of the cover and hive walls almost free of hoar frost. Is it not wonderful?

Here is what these bees and the other five hives have had to brave since December 15. The average minimum temperature was 25 degrees below zero for 15 days in December and 36 below zero for 23 days in January, and for the whole 38 days recorded, 32 below. We had in this period three days of 65 below or lower, five days of 60 below or lower, nine days of 50 below or lower, and 15 days of 40 below or lower.

These figures are correct as my neighbor is keeping a government meteorological station and has entered every day the minimum and maximum temperature data for more than 20 years.

In all the 38 days mentioned only 11 reached above zero in the warmest parts of the days.

This weather is not normal for our Peace River Country. In fact, it is probably the coldest January recorded. We do have cold spells every winter, but they are usually not so prolonged and we also get our Chinook warm winds when the temperature can raise in a matter of a few hours from, say, 35 to 40 degrees below zero to 45 degrees and more above. The change may come so suddenly that you may start out in the morning in parka sheepskin coat, moccasins or felt boots, and find yourself walking in water from the melting snow in the afternoon.

One of my old-timer neighbors jokingly told me the yarn, "Well, Vic, I remember the time when I pretty nearly killed my horses trying to be ahead of the Chinook in my sleigh, as it was melting so fast from the west that traveling east my front runners of the sleigh were on the snow but the hind ones already on bare ground."

Do these Chinooks benefit the wintering of the bees? I don't know. It seems to me that they do more harm than good. The bees get restless and ambitious, break up the cluster, fly out too freely, and many of them land on the cold ground or snow and never return home. They commence to rear brood too early, often with fatal results to the brood and themselves. Of course, a cleansing flight is important for their well being—but just how important, I don't know, as we seem to lose a big percentage of bees on those flights if the weather is not extremely warm.

Our winters in the Peace River are about one month too long for the endurance of the bees. They often endure the coldest weather only to perish in late March or early in April. Our spring commences usually around April 20. Between

April 20 and May 1 the bees start to gather pollen and honey from the willows, followed by the dandelions a month later.

My bee losses in wintering were high on an average of the 10 years —30 to 60 percent—but I still try to find a safer method to winter bees in our North.

What is My Object to Winter Bees at All?

Well, first I have not the heart to kill them after their working for me; (2) If I have the luck to save them through the winter they do so much better than the package bees in obtaining honey yields; and (3) one of the main reasons for me is that I get from the overwintered bees an early strong force in time for pollination service on alsike and sweet clover. I know they are very important in this service—the results are plain enough—in bigger seed yields, and finally I like to experiment in wintering with the hope of having better luck next time.

I believe the ideal condition to obtain in trying to winter bees for our North are (1) a really good queen in early fall, which is laying the maximum of eggs at this time, with the result of a healthy big young bee population for winter; (2) abundance of honey and pollen stores of best quality with the least tendency to granulate; (3) provision of a good ventilation—top entrance or middle entrance.

The packing is probably not so important as we imagine. Well, this is all—everything is simple and plain—and we have heard it many a time before.

Beekeeping Genetics

By Penn G. Snyder, Trotwood, Ohio

All life including mankind lives under the law of eat to live. This law cannot be evaded. Honey bees were compelled to store a sufficient amount of honey and pollen to tide them through the winter and until the spring flowers provided a living. In a state of nature Darwin taught us the weak and unfit would be eliminated.

History tells us that down through the centuries beekeepers, knowing nothing of genetics, used a rather poor method for the survival of their bee colonies. All of the heaviest colonies by weight (which means their most productive colonies) as well as the lightest in weight were killed off at the end of the honey season. This method of selection did not on an average retain the best of their working stocks.

Uncontrolled matings of the virgin queens made scientific selection and matings a difficult matter to the expert beekeeper or queen breeder as well as to the novice. Despite the greatest care and selection over a period of years inferior queens were frequently produced.

One of the early geneticists, Gregor Mendel, found himself making little or no progress when he tried to improve the honey bees in his apiary. This, after having discovered and perfected vital laws pertaining to plant and animal life. Little progress in the improvement of our honey bees was possible until the Watson technique of artificial insemination was developed. This opened the scientific door, and the method has been improved and refined by later workers, notably Nolan, Laidlaw, and Mackensen, until today in the hands of a trained geneticist controlled matings are now made fully possible.

The trained geneticists engaged in this work by the United States Department of Agriculture as well as the State Experimental Stations are fast bringing the bee of the future to us.

One of the very unexpected findings by these scientific experimentors has been the discovery that honey bees sometimes scramble the sexes. Some sex mosaics have shown different combinations of male and female tissue. Drone heads on female bodies have been conspicuous. Vestigial stingers have been noted on otherwise drone appearing abdomens.

We hope our expectations in being provided with the bee of our dreams is now well under way.

XUM

Buy and Sell Here

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate: 15c per counted word, each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it), count as one word. Copy should be in by the 10th of the month preceding publication.

HONEY FOR SALE

WE BUY AND SELL all varieties of honey. Any quantity. Write us for best prices obtainable. The Hubbard Apiaries, Onsted, Michigan.

NEW CROP of honey shipped daily from producer in Florida. Pure orange blossom, 5 lbs., $2.25; Pure Florida cut comb honey, 5 lb. pail, $2.75. No C.O.D. orders. All shipments prepaid. E. R. Raley. Daytona Beach, Box 1610, Florida.

CLOVER extracted honey in sixties. Abram Brubaker, Lancaster, Pa., Rt. 1.

CHOICE CLOVER HONEY in sixties, a can or a carload. Sample, 15c. Schmidt Apiaries, Rt. 4, Bay City, Mich.

CARLOADS or less, any grade, rail car or semi loads, direct from producer to you. Ask for quotations. Alexander Company, 819 Reynolds Road, Toledo, Ohio.

ORANGE BLOSSOM HONEY in new 60's. Peter W. Sowinski, Fort Pierce, Fla.

HILTNER'S CRYSTAL CLEAR HONEY in decorated tumblers, 5-lb. jars, or 60-lb. cans. Your label if desired. Hiltner's Apiaries, North Creek, Ohio.

BEST CLOVER HONEY, 60-lb. cans, $9.00. Irvin Van Devier, Medina, Ohio.

900 cans fine clover honey. Lawrence Robins Apiaries, David City, Nebraska.

CLOVER EXTRACTED heat honey, ready for bottling. New 60-lb. cans. Sample 15c. Norman Ellis, Caro, Mich.

HONEY—Ohio delicious extracted white clover honey. 60-lb. can, $9.00 fob Delphos. Sample, 20c. Melrose Apiary, Delphos, Ohio.

15 55-gallon steel drums of light mangrove honey. $50.00 per barrel fob Deland, Fla. D. P. Green.

NEW CROP pure midwestern white clover honey, expertly packed, nicely labeled. Makes excellent gift. 5-lb. pail shipped prepaid to your door, $2.00. Send check or money order to National Honey Co., 2711 North 63rd St., Omaha 4, Nebraska.

HONEY, choice light amber mixed with citrus in 60-pound cans, 12 cents per pound. N. J. Barnett, Box 895, Pharr, Texas.

FOR SALE—No. 1 weight comb, $6 per case of 24 sections; culls, $4 per case. Used bee equipment cheap. H. G. Quirin, 400 South West St., Bellevue, Ohio.

600 cans white clover honey. Sample 20c. Sueper Apiaries, 114 Des Moines St., Webster City, Iowa.

FOR SALE—100—60's buckwheat. M. P. Traphagen, Hunter, N. Y.

HONEY, WHITE CLOVER, heated and strained, ready for bottling. 15c per lb. in 60-lb. cans, fob. LOSE BROTHERS, 206 E. Jefferson St., Louisville, Ky.

ONE CAN or a carload of white clover honey in 60-lb. cans. Don't let your customers go elsewhere. We can pack our honey for you in glass if you wish. You will like our quality and delivery. Sample, 20c in stamps. National Honey Co., 2711 North 63rd St., Omaha 4, Nebraska.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTICE—We can not guarantee honey buyers' financial responsibility, and advise all beekeepers to sell for cash only or on COD terms except where the buyer has thoroughly established his credit with the seller.

CASH FOR YOUR HONEY — Light extracted or comb. Regular trade send sample. 60-lb. cans furnished if desired. W. R. Moomaw, Stone Creek, Ohio.

HONEY WANTED—All grades and varieties. Highest cash prices paid. Mail samples. State quantity. HAMILTON & COMPANY, 1360 Produce St., Los Angeles 21, California.

WANTED — White and amber honey. Any amount. D. F. Treap, 316 Keenan Ave., Cuyahoga Falls, Ohio.

WANTED—EXTRACTED HONEY— Clover or light amber. C. H. Denny, Rt. 4, Ravenna, Ohio.

HONEY AND WAX WANTED — Mail sample. Advise quantity. BRYANT & SAWYER, 2425 Hunter St., Los Angeles 21, Calif.

CASH for your comb honey and all types extracted. Send sample and best price. Buckeye Honey Co., 3930 N. High St., Columbus 2, Ohio.

WANTED honey of all grades. Submit samples. Highest prices paid. Schultz Honey Farms, Ripon, Wisconsin.

CASH FOR BEESWAX. Write as to quantity and we will quote price. Muench-Kreuzer Candle Co., Inc., Syracuse, N. Y.

BEFORE YOU SELL your clover honey contact us. Send samples and tell us how much you have. The Delaware White Clover Apiaries, 139 West William St., Delaware, Ohio.

CARLOADS or less of honey and wax. Send sample and price. We have a government contract to pack your price support honey. Advice on request. Alexander Company, 819 Reynolds Road, Toledo, Ohio.

WANTED — White extracted or comb honey. Send sample. Millersport Honey Co., Millersport, Ohio.

WANTED—Extracted honey in 60-lb. cans. Send sample and price you want. John Harnack & Son, McGregor, Iowa.

HONEY PRODUCERS if you can ship car or trailerloads of bulk honey, send us samples and full particulars. We are honey brokers established since 1910, operating on small brokerage payable by seller. CHAS. E. FARRIS CO., 99 Hudson St., New York City.

WANTED — One car white to water white extracted honey. Willing to pay over Government Support Price. Send price and small sample. Lose Brothers, 206 E. Jefferson St., Louisville 2, Ky.

FOR SALE

QUEENBEE PAINTING OUTFIT, $1.00; colony records, 10-15c postpaid. Southwick Apiaries, Waban, Mass.

We carry a full line of ROOT QUALITY Bee Supplies. Prairie View Honey Co., 12303 12th St., Detroit 6, Mich.

FOR SALE — Write for large free Bee Supply Catalog. We manufacture bee hives, foundation, tanks, and extractors. Listing many items not found in other catalogs. Walter T. Kelley Co., Paducah, Ky.

WRITE FOR CATALOG — Quality Bee Supplies at factory prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Manufacturers of Beekeepers' Supplies, Onsted, Mich.

The only comb foundation plant in the East. We sell foundation, work your wax, render combs and cappings. Robinson's Wax Works, R. D. 3, Auburn, N. Y.

SIMPLEX TRAP clips queens without handling, $1.00 postpaid. Instant Frame Spacers — eight-nine, specify size, $1.50 postpaid. Free circulars. George Leys, 36 Jackson St., New Rochelle, N. Y.

CLEAN UP AFB WITH SULFA. 25 tablets, 50c; 50, $1.00; 100, $1.50; 1000, $7.00. Write for big 64-page catalog listing many items not found in other catalogs. WALTER T. KELLEY CO., Paducah, Ky.

FOR SALE—500 colonies bees. Good equipment. Also queen rearing equipment, sell all or part. Charles Baker, Livingston, Ala.

YOUR WAX WORKED INTO medium brood foundation, 23c pound; 100 pounds, $19.00. Fred Peterson, Alden, Iowa.

200 colonies bees, all or any part. Available up to April 1. Grant D. Morse, Saugerties, N. Y.

FOR SALE — 50 two-story colonies of bees. Equipment for 100. Write Stan Trescott, Wanakena, New York.

BEES — 30 swarms, extra equipment and supplies including extractor. Erwin Schweinhagen, 628 Brighton, Toledo 9, Ohio.

50 colonies of bees. Must be sold account of age. All two and three stories. Two-frame Root extractor and extra supplies sufficient for at least one year. Write for prices. I. H. Hoffman, Califon, N. J.

HONEY WANTED
Carloads and less than carloads. Mail sample and best prices in all grades.
C. W. AEPPLER COMPANY
Oconomowoc, Wisconsin

Michigan Headquarters for
Root QUALITY
Bee Supplies
Complete Line of Bee Supplies and Honey Containers
Prompt Service
Michigan Bee and Farm Supply
510 N. Cedar St.
Box 7 Lansing, Michigan

Root Quality Bee Supplies
Prompt service from a complete stock of Bee Supplies.
If driving to Indianapolis for bee supplies, drive to our store, 121 N. Alabama St., and we will secure parking for your car.
A. I. ROOT CO. OF INDIANAPOLIS
121 N. Alabama Street
Indianapolis 4, Indiana

HONEY LABELS
Improved designs, embodying color, balance, simplicity, and distinction. Please send for free samples & prices.
C. W. AEPPLER COMPANY
Oconomowoc, Wisconsin

THANKS . . .

to our many customers for the kind favors and the many letters of praise. We wish you a very **Merry Christmas** and a **Happy and Prosperous New Year.** May the blessings of God be upon all.

Walter D. Leverette Apiaries
Fort Pierce, Box 364, Florida

Package Bees and Queens
Italians
Let us plan with you for 1951
The Wilbanks Apiaries
Claxton, Georgia

Little & Moore Apiaries
Originally
LITTLE'S APIARIES
The John M. Davis Strain
GUARANTEED TO PLEASE
or money refunded
April 1st to June 1st:
1 to 10, $1.20 each
10 to 100, $1.10 each
June 1st to Nov. 15th:
1 to 10, $1.00 each
10-100, 90c each
Little & Moore Apiaries
Shelbyville, Tenn.

Package Bees
Italian Queens

Packages with Queens:

	2 lbs.	3 lbs.	4 lbs.	5 lbs.
1-99	$3.00	$3.90	$4.70	$5.30
100-up	2.75	3.75	4.40	5.00

Queens 90c each Airmail postpaid
—clipped on request.
No better quality at any price
Satisfaction guaranteed

Geo. A. Hummer & Sons
Prairie Point, Miss.
Established 1892

FOR SALE—About 300 colonies of bees in good condition. About 1000 shallow and standard depth extracting supers. One 45-frame Root extractor. One Woodman 30-frame extractor. One Root capping melter. One large storage tank. One electric uncapping knife. All other modern equipment that is needed to operate bees. Bees inspected this summer and found free of disease. Will sell at a reasonable price. F. W. Churchill & Son, West Valley, N. Y.

BEES AND QUEENS FOR SALE

We use all possible care in accepting advertisements but we cannot be held responsible in case disease occurs among bees sold or if dissatisfaction occurs. We suggest that prospective buyers ask for certificate of inspection as a matter of precaution.

CAUCASIANS—Booking orders for 1951. Lewis & Tillery Bee Co., Route 1, Box 280, Greenville, Ala.

PACKAGE BEES headed by mountain gray Caucasians of leather colored Italian queens. Write for prices. Twin Bee Co-op., 3616 Caucasian Circle, Tampa 9, Florida.

BREWER'S LINE BRED Caucasian queens, 1-99, $1.00; 100 and up, 75c. Member ABBA. Brewer Brothers Apiaries, 36-16 Caucasian Circle, Tampa 9, Florida.

THREE BANDED Italian Queens, best of quality. Select untested, 1 to 25, $1.00 each; 25 up, 80c each. Satisfaction guaranteed. Alamance Bee Company, Graham, N. C.

Delivery charges on Bambi brand package bees and Bambi brand extra queens WILL BE PREPAID. Please place your 1951 order early. Ecrivez nous en Francais si vous le desirez. Southern Apiariez & Supplies Company, Chatom, Alabama.

CARNIOLAN QUEENS and PACKAGE BEES—Booking orders for 1951. EPHARDT HONEY FARMS, Batchelor, Louisiana.

FOR THE BEST OFFER in 1951 Bees and Queens, write Cottage Hill Apiaries, Rt. 2, Box 64, Mobile, Ala.

YANCEY HUSTLER PACKAGES AND QUEENS—The old reliable honey-production strain. Will be ready April 1st. Caney Valley Apiaries, 2500 Nichols, Bay City, Texas.

MISCELLANEOUS

FOR SALE — Honey processing plant, located in New York State, consisting of plant and all equipment including filtration equipment, vacuuming equipment, 12-spout vacuum filler, automatic labeling machine, complete equipment for Dyce processing honey, cold storage room, steam boiler, all accounts, copyrighted trade name, caps, glassware, labels, etc. Capacity of plant 5000 to 6500 pounds per day. Equipment on hand, not installed, to double this capacity. Any persons interested write Box 382, Gleanings in Bee Culture, Medina, Ohio.

BEES FOR LEASE AND SALE—Montana, Wyoming, Idaho, Nebraska. Contact Bradshaw & Sons, Wendell, Idaho.

FOR SALE OR TRADE—35 stands Italian bees, 40 extra hive bodies, supers, and frames, extractor, 170 gallons chunk honey. Sell, trade for automobile, deep freeze, or large refrigerator. Clay Byron, Owingsville, Ky.

FOR LEASE—500 10-frame overwintered hives of bees in good honey-producing area, plenty drawn combs. I pay yard rent and furnish honey house and extractor. You furnish labor and truck. Honey and wax divided equally. O. L. Taylor, Harlan, Iowa.

WANTED

WANTED power foundation rolls, new or used. No junk wanted. H. E. Randall, Moore Haven, Fla.

WANTED — Standard depth supers, drawn combs (wired), disease free. W. C. Long, 1325 Andre St., Baltimore, Md.

POSITION WANTED

EXPERIENCED BEEKEEPER wants part time job in Florida during months of February and March. Willis E. Herbert, Franconia, New Hampshire.

SUPPLIES

ATTENTION BEEKEEPERS IN MINNESOTA and adjacent states. We offer a real service on Lewis-Dadant Supplies, honey containers, and labels at a price saving to you. Top market prices paid for extracted honey and beeswax. HONEY SALES COMPANY, 1806-08 NO. WASHINGTON AVE., MINNEAPOLIS, MINN.

SEEDS

SEEDS OF HONEY PLANTS. Ask for free catalogue. Pellett Gardens, Atlantic, Iowa.

Get our Special Pasture Catalog for shrubs, trees, and perennials. NICOLLET COUNTY NURSERY, St. Peter, Minn.

MAGAZINES

WESTERN CANADA BEEKEEPER—Official organ of the Manitoba Beekeepers' Association. One year, $1.50; two years, $2.25; three years, $3.00. In combination with Gleanings in Bee Culture, $2.75. 211 Affleck Bldg., Winnipeg, Canada.

KNOW interesting facts concerning the bees of India through the INDIAN BEE JOURNAL, published in English by the Bhupen Apiaries (Himalayas), Ramgarrh, Dist. Naini Tal, U.P., India, or available from them. Subs. Rs7/ or 10 shillings or 2.25 dollars per annum. Single copy Rs¼ s. 1/9 or 40 cents (International Money Order). Payment in mint postage stamps of your country accepted.

THE BEE WORLD—The leading journal of Great Britain and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy post free. 12 cents stamps. Membership in the Club including subscription to the paper 10/6. The Apis Club, L. Illingsworth, The Way's End, Foxton, Royston, Herts, England.

Read the South African Bee Journal. Published every two months. Subscription **7/6 per year to the Treasurer, P. O. Box** 3306, Cape Town, South Africa.

YORK'S

Package Bees and Queens
Quality Bred Italians
for 1951
The Strain Preferred by
Leading Honey Producers

We are now booking orders and getting ready to serve you the coming season with the highest quality and best of service. Book orders now. Prices will be announced later.

York Bee Company

Jesup, Georgia, U. S. A.

(The Universal Apiaries)

CAUCASIANS
CARNIOLANS

Wish you all a very **Merry Christmas** and a **Happy and Prosperous New Year.** Preparing to have Queens and some package bees by March 1st, 1951.

Albert G. Hann, La Belle, Florida

Northern Bred
Italian Queens

White Pine Bee Farms
Rockton, Pa.

Italian Package Bees and Queens
F. E. Morrison
Rt. 3, Box 3696, Auburn, Calif.

Better Bred Queens
Three Banded Italians
Calvert Apiaries
Calvert, Alabama

Merry Christmas

May the Spirit of Christmas be a blessing to you and may enough of the good things of life come your way that you will have comfort and joy the remainder of your days on earth. Our part in this will be to supply the very best

Package Bees

possible, to bring you larger financial returns from your operations.
Consider your needs early and give us an opportunity to supply you. Watch our ads.

"They Produce"

Rossman & Long
P. O. Box 133
Moultrie, Ga.

STOVER'S
For Better Bees and Queens
The Stover Apiaries
Mayhew, Miss.

WANTED

One car white to water white extracted honey. Willing to pay over Government Support Price. Send price and small sample.

Lose Brothers
206 E. Jefferson St.
Louisville 2, Kentucky

ANGORA GOATS

DO YOU FIND it difficult to secure information about sheep and sheep ranching methods? The SHEEP AND GOAT RAISER reaches more sheepmen with more information on range sheep than any other magazine published. Subscription — $1.00. Hotel Cactus, San Angelo, Texas.

TOO LATE TO CLASSIFY

WANTED—Beeman to work bees. Wages or share. In Missouri or Nebraska. Write to Gleanings, Box 1250, Medina, Ohio.

WANTED: Experienced beekeeper. Good opportunity for right party. Year around work. Modern apartment. Walker, Box 412, Milford, Michigan.

MARRIED MAN, EXPERIENCED in all branches of beekeeping wants steady job. Box 12, Gleanings, Medina, Ohio.

From North, East, South and West

(Continued from page 753)

The wholesalers are satisfied with the set-up because a wholesaler now realizes that if he buys a carload of honey today at a price, his competitor cannot buy a carload tomorrow at 25 cents per case less.

Having indicated their approval of the Provincial plan the beekeepers may now apply to come under Bill 82 of the Federal "Agricultural Products Marketing Act" by which honey coming into Ontario from other provinces and foreign countries must also sell at the wholesale price set by the board. It is of interest that the province of Saskatchewan has also adopted a similar plan, and it is hoped that the other provinces will adopt similar ones and that eventually the prices will be stabilized on a countrywide basis. I will mention from time to time how the plan is succeeding.—Allan T. Brown, Peterborough, Ontario.

Greetings

to everyone everywhere. We are very grateful to each of you who has patronized us in the past. Again looking to you for 1951.

New customers
Limit, 25 queens, 10 packages.

Queens	$1.25
2 lb. pkgs.	3.25
3 lb. pkgs.	4.00

O. K. Anderson & Son
Box 193, Coffee Springs, Ala.

BEE LINES TO THE EDITOR

(Continued from page 716)

article that you may use if you like.

May I suggest to P.G.F. of Ga. that for southern ideas he consult "Bees", a small magazine published right in his own state by the Hale Publishing Co. of Hapeville. I would not replace Gleanings with it, but supplement it.

And to R.F.H of Va., since when did honey become a luxury? Honey is selling here for 80 cents to $1 for five-pound jars. One-pound containers are as low as 21 cents. That is very little more than double, if quite, the price of corn syrup. And with honey containing nearly twice as many calories, plus many times the flavor, I can't see that it is a luxury. And after peddling honey over half a dozen towns and cities for two winters to homes that range from hovels to mansions I find that the people who can afford luxuries are not the best honey buyers.—R. S.S., Kans.

* * * * *

I just don't seem to have time to read Gleanings and so there is no use to spend good money just to throw it away. I have a few bees but don't have much time to care for them.—F.N.C., Pa.

Forehand's Desert Bred 3-Band Italian Queens
Write for Prices
Heber Forehand
Box 1, High Rolls, N. M.

BEES & QUEENS
Master Mix Pollen
Over 30 Years a Shipper
Send for FREE CIRCULARS
Blue Bonnet Apiaries
Weslaco, Texas

DADANT'S STARLINE HYBRIDS — ABBA

JENSEN'S
Package Bees and Queens for 1951
We will be prepared to supply your needs with the kind of bees and queens that have established a reputation for us that we are humbly proud of, and for which we make no apologies. A clean record for fair dealings over a long period of years, we boast a clientele that know and demand quality bees and queens, and who have consistently bought from us year after year. They are people who have passed the experimental stage, and are successful in their businesses. Take a cue from those who know, and buy your bees and queens from
Jensen's Apiaries
Macon, Miss.
"The business Quality and Service built"

Healthy Italian Bees & Queens
Write for 1951 Prices
Georgia Bee & Honey Apiaries
P. O. Box 312 Hortense, Ga.

SURE — YOU'LL LIKE IT
Send for Free Sample Copy
The Beekeepers Magazine
Lansing 15-B, Mich.
Established 1938
("Just a Little Independent")

Modern Beekeeping
The picture magazine of beekeeping. We show you with pictures how to do the job easier, quicker, and better. Special inventor's page.
1 yr., $1.50; 2 yrs., $2.50; 3 yrs., $3.25.
Modern Beekeeping
Paducah, Kentucky

OLDEST BEE JOURNAL IN THE ENGLISH LANGUAGE
Keep up on markets, practices, scientific data, regulations, and plant possibilities.
1 year, $2.00, U. S. and Canada
Foreign postage, 50c a year extra
AMERICAN BEE JOURNAL
Hamilton, Illinois

Allen Latham's BEE BOOK
The first and only book ever written by the great master of beekeeping, published December, 1949. 200 pages. 27 chapters. Handsomely bound in cloth and sent to you postpaid in special protective wrapper.
$2.95 Postpaid
HALE PUBLISHING COMPANY
Hapeville, Georgia

We are interested in Buying HONEY
Send sample and price
T. J. Paisley Co.
Medina, Ohio

Peace on Earth,

Good Health to Children

For the sake of your children, buy and use Christmas Seals.

Thanks to Seals, children today have a far greater chance of escaping TB than you did.

To give them a still better chance, send your contribution today, please.

buy Christmas Seals

Because of the importance of the above message this space has been contributed by

Gleanings in Bee Culture

HONEY IN THE DIET

(Continued from page 734)

those that occurred, the "no honey" patient had the great majority. In insulin reactions, giving honey had no effect and we had to use ordinary sugar.

As all fruits were unsweetened, honey was allowed according to Dr. W.'s orders. Honey combines quickly with all fruits and increases the levulose content, making a good combination for diabetics when sugar in any form is allowable.

But men like Dr. W. cannot remain as mere resident physicians in institutions, consequently Dr. W. left us after two years and is now a very successful eye specialist—specializing in children's eye troubles, a truly noble profession. No deaths among diet patients.

Dr. W. was succeeded by Dr. M., also just through with his internship. He was "very wise" (?) and made several changes. "That honey is all bunk, no more of it." "Weighing is merely a waste of time, lump it off. You know how much each patient should get." Smart boy!

When his bungling resulted in **four reactions and one death in one week**, I quit. All these were diabetic patients. **Dr. W.'s two years passed without a single death.**

In one year Dr. M. lost the majority of his diabetic patients, nine by death, two were sent to the County Hospital, and one became insane.

Dr. M. was succeeded by Dr. A., who did somewhat better. He in turn was succeeded by Dr. G., who does very well. He is careful, more successful, and allows honey in some diabetic cases.

From the results obtained by Dr. W., I am firmly convinced that honey is a **big** factor in diet. It was intensely gratifying to note the relish with which diabetics who were allowed honey would put away their allotment of honey-sweetened food. One was allowed only half a small honey cookie at each meal, but he ate it slowly and with gusto. The "refuser" steadily and stolidly continued to "refuse". "Tastes", he said, "Just as good, and my doctor said not to eat any sugar, and darned if I will."

I do not claim that Dr. M.'s "no honey" order caused his trouble, but it and his careless methods in

(Continued on next page)

POLLINIZERS

(Continued from page 731)

velop a nest with many daughters to help. While first out of winter quarters the bumble-queen was hungry and as she flew about she caught the scent of sweets and was led to the bee hive. She went into the hive and in many cases never came out. If she did come out she came with three or four honey bees having a ride on her. I think if I kept a count of the dead bumble bees I have seen during my 66 years of beekeeping I think the number might reach a thousand — safe to say, more than a hundred. Every bumble-queen dead meant one less bumble-nest.

In my boyhood one never thought of taking bee hives into apple orchards. The trees were loaded with fruit, and the fruit was perfect. Though an apple was occasionally wormy, as a rule most of the apples were perfect and they had a darn sight better flavor than apples have nowadays when the orchards are too heavily fertilized. Back in the 70's, my early boyhood, there were no apple maggots, few codling moth wormy apples, and no diseases, etc., etc. Apple pests had not been brought into this country from distant lands—just as no brown-tail moths, gypsy moths, no elm tree beetles, no Dutch beetles nor Japanese beetles.

What new pest will be with us in the fifties?

Georgia Papershell Pecans
in the shell
5 lbs. net, $2.50 Postpaid
Girardeau Apiaries
Tifton, Ga.

KOEHNEN'S
Package Bees and Queens
For Quality and Service
KOEHNEN'S APIARIES
GLENN, CALIFORNIA

HONEY IN THE DIET

(Continued from previous page)

handling diabetic cases certainly were factors.

Also, when honey was allowed by both D. W. and Dr. G. for the same patient, that patient invariably fared better with honey.

Caution to Diabetics!!

Do not experiment with honey, or any other food! **Act only on your doctor's orders.** Diabetes is a dangerous disease and will permit no "monkey doodle"!

High Quality
QUEENS
75c each by Airmail
Carlus T. Harper
New Brockton, Ala.

Packages SUNKIST Queens

NOW is the time to place your order for packages and queens. Guaranteed top quality and service. We are booking orders with no deposit, subject to price confirmation quoted later.

Sunkist Bee Company **Convent, La.**

PACKAGE BEES AND QUEENS —

GREETINGS to our Friends and all beekeepers. THANKS for the past good season.

Much time has been consumed to prepare our bees well for 1951.

We suggest early booking for best results.

Garon Bee Company **Donaldsonville, La.**

Bring Your Dreams Down to Earth
Buy Bonds

XUM

Cut Comb Honey Trays and Display and Handling Cartons

Our New Style packing for Cut Comb Honey is pleasing to the consumer. In many places more honey is being sold than ever before. The two sizes are a decided advantage. The attractive display, design, and colored printing boosts sales.

Both the Cut Comb Open Face Cardboard Trays and the Display and Handling Corrugated Cartons snap together easily giving good protection. No glueing or gummed tape necessary.

The Display and Handling Carton holds 12 of the Large Size Trays or 24 of the Small Size Trays. Will also take 12 of the Style Two Window Cartons that are used for 4¼ x 4¼ x 1½ plain sections.

Cuts must be wrapped in moisture-proof cellophane, which can be Scotch Taped or Heat Sealed. Well drained or dried edges make better pack.

	Per 100	Per 500	Per 1000
Small Size Trays for cuts 2 x 4⅛ inches	$1.25	$5.00	$9.75
Large Size Trays for cuts 4⅛ x 4⅛ inches	1.50	6.25	12.00
6½ x 8 inch MP Cellophane, for small cuts	.50	2.00	3.80
8 x 13 inch MP Cellophane, for large cuts	.90	3.75	7.25
	Per 10	Per 25	Per 50
Cut Comb Display and Handling Cartons	$1.50	$3.35	$6.00

A complete line of containers for marketing honey. Send for price list.

A. G. Woodman Co. Grand Rapids 4, Michigan

BESSONET'S BEES AND QUEENS

Our preparations for 1951 are now under way. Many wise buyers already have their dates reserved. It is later than you think, so write us TODAY without obligation and we will advise if the dates you want are available.

Bessonet Bee Company, Donaldsonville, La.

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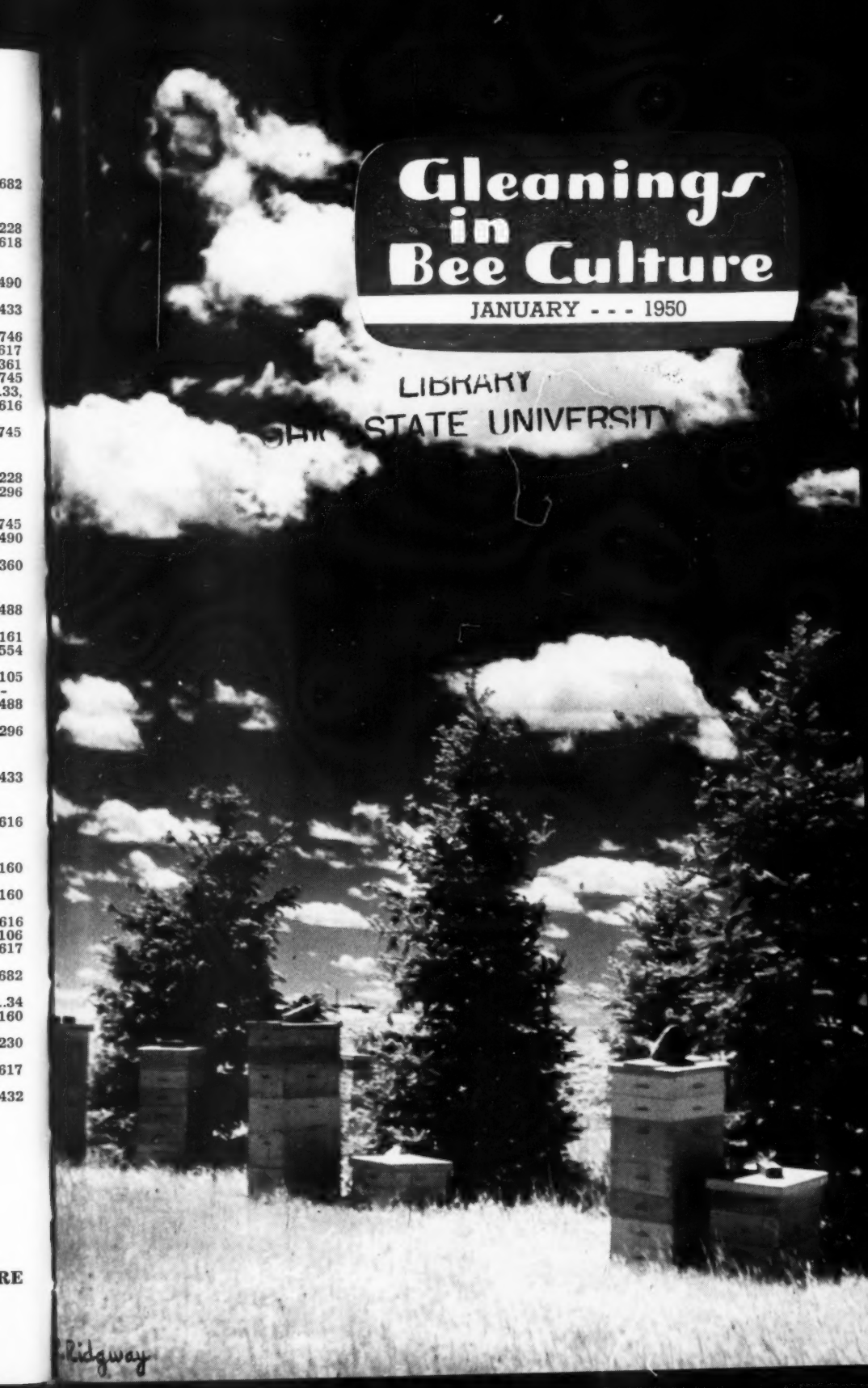
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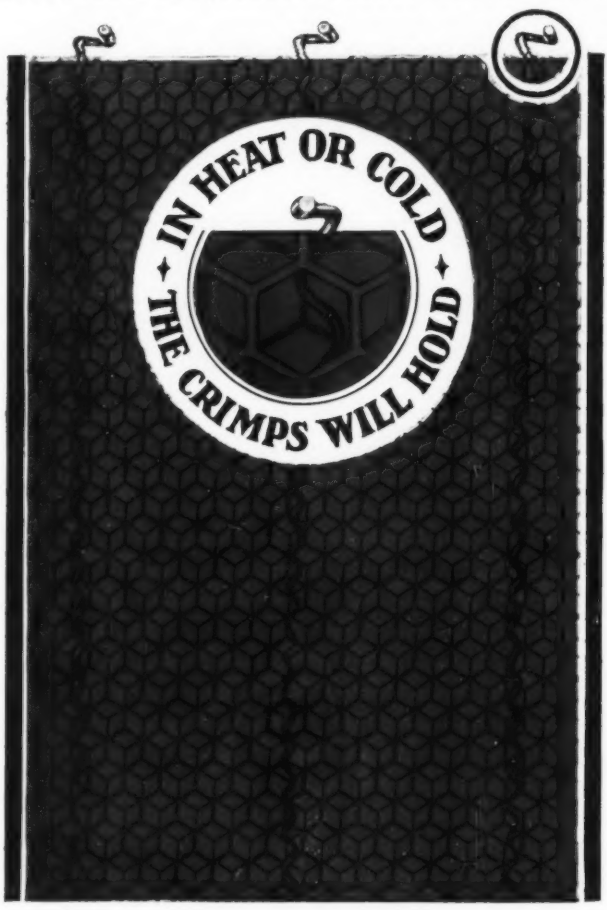

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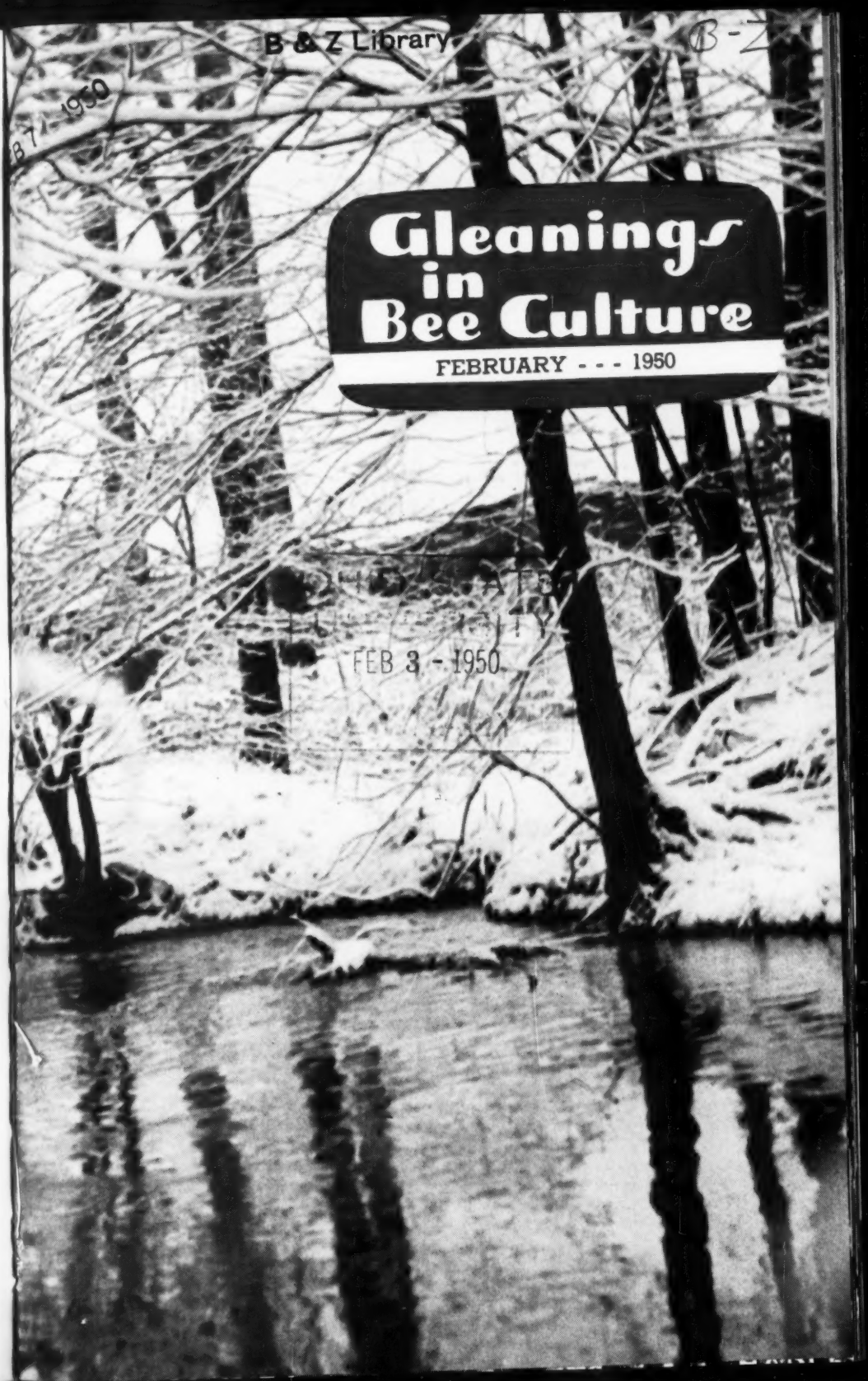

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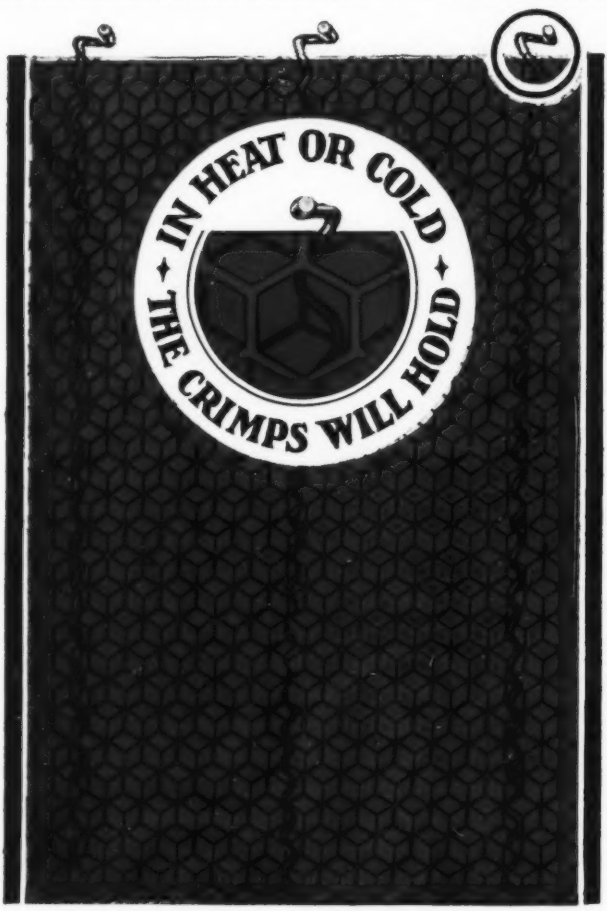

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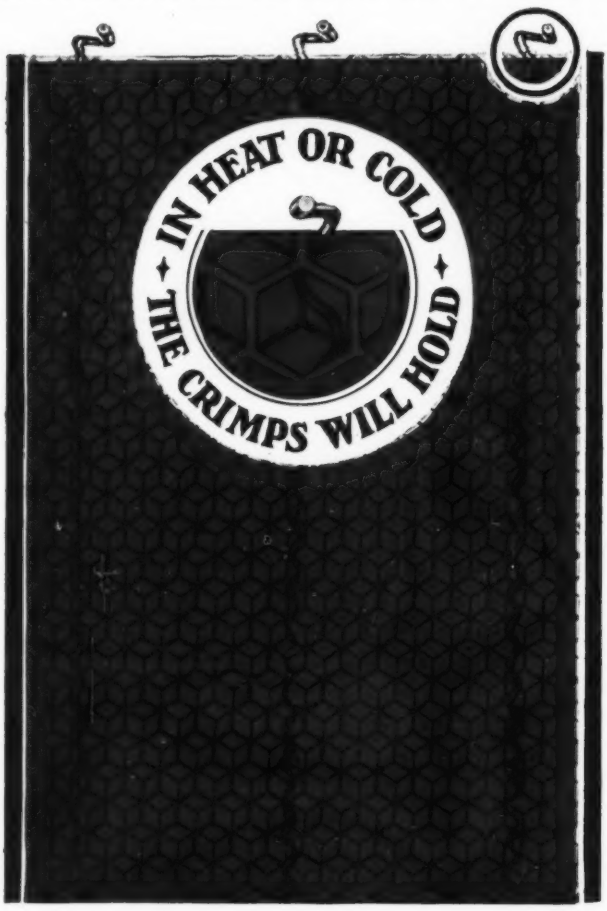

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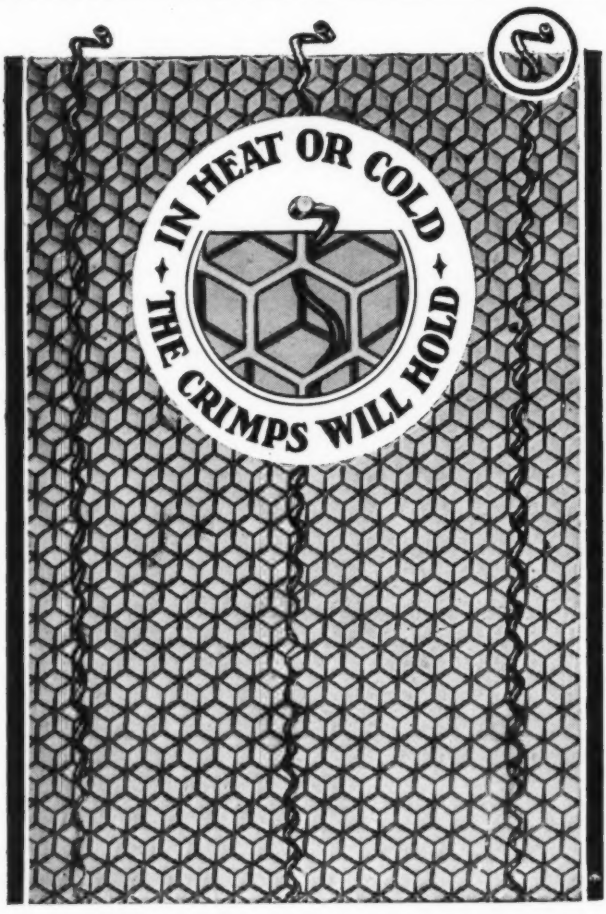

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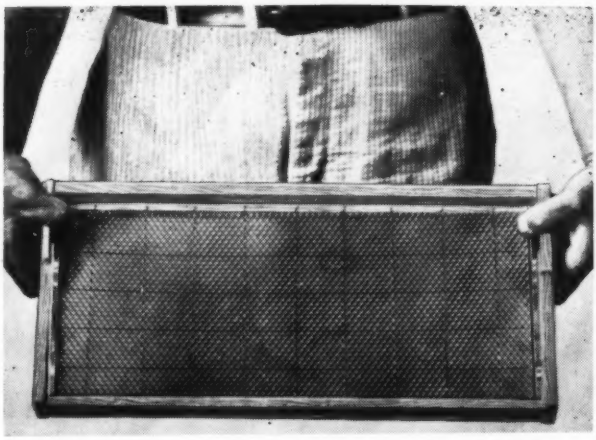

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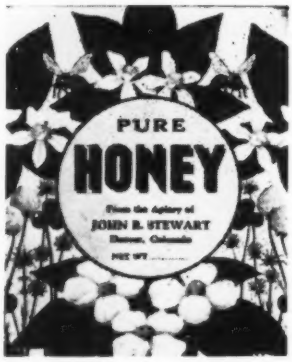

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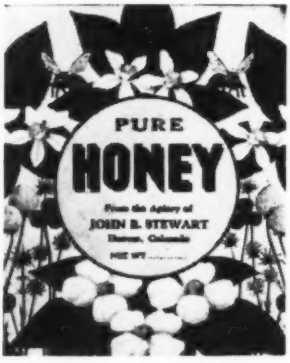

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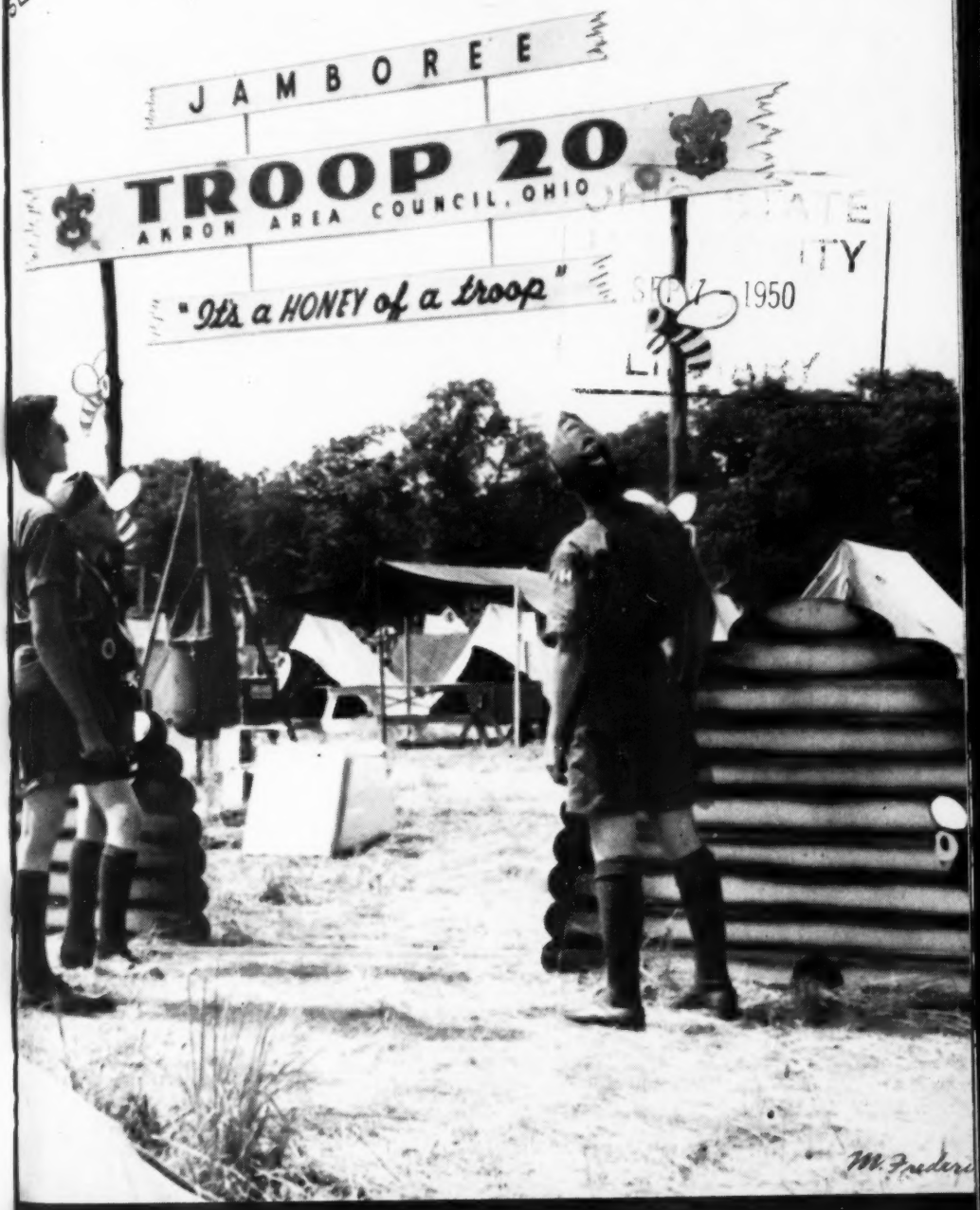

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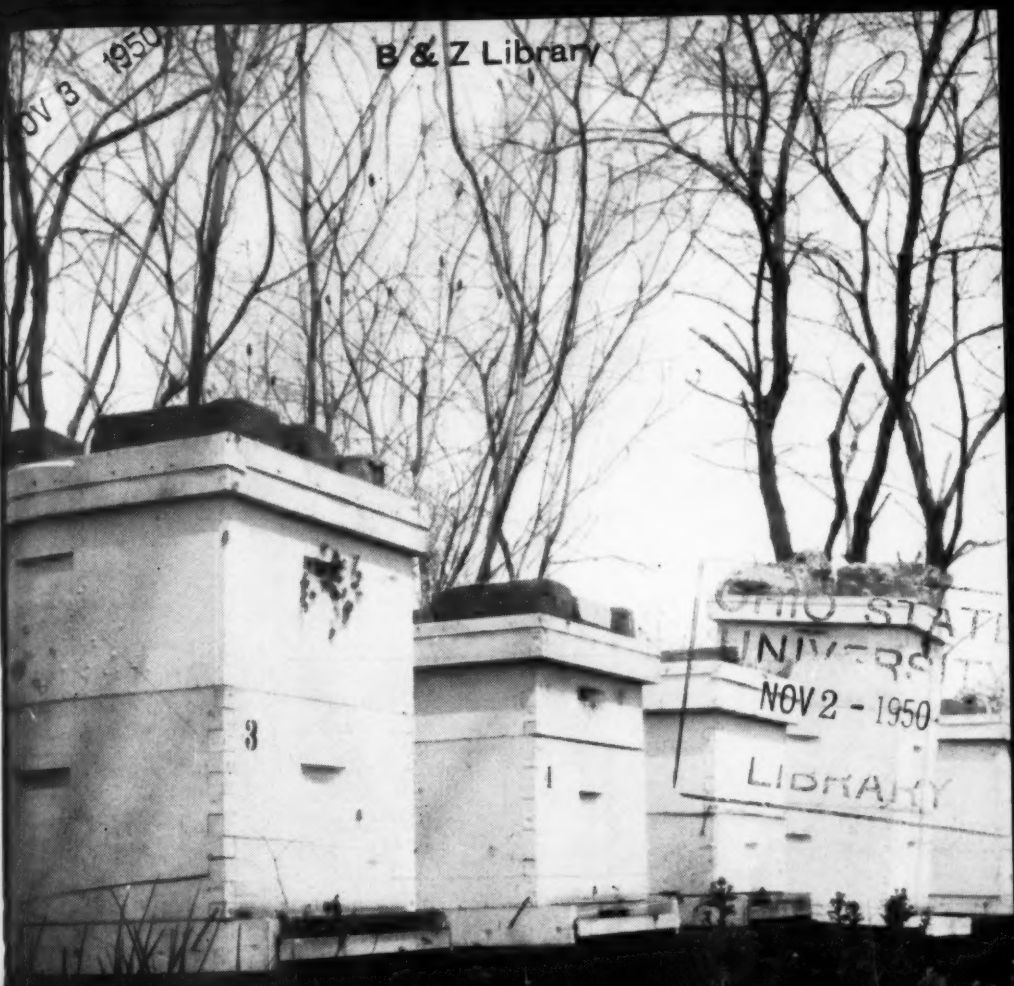

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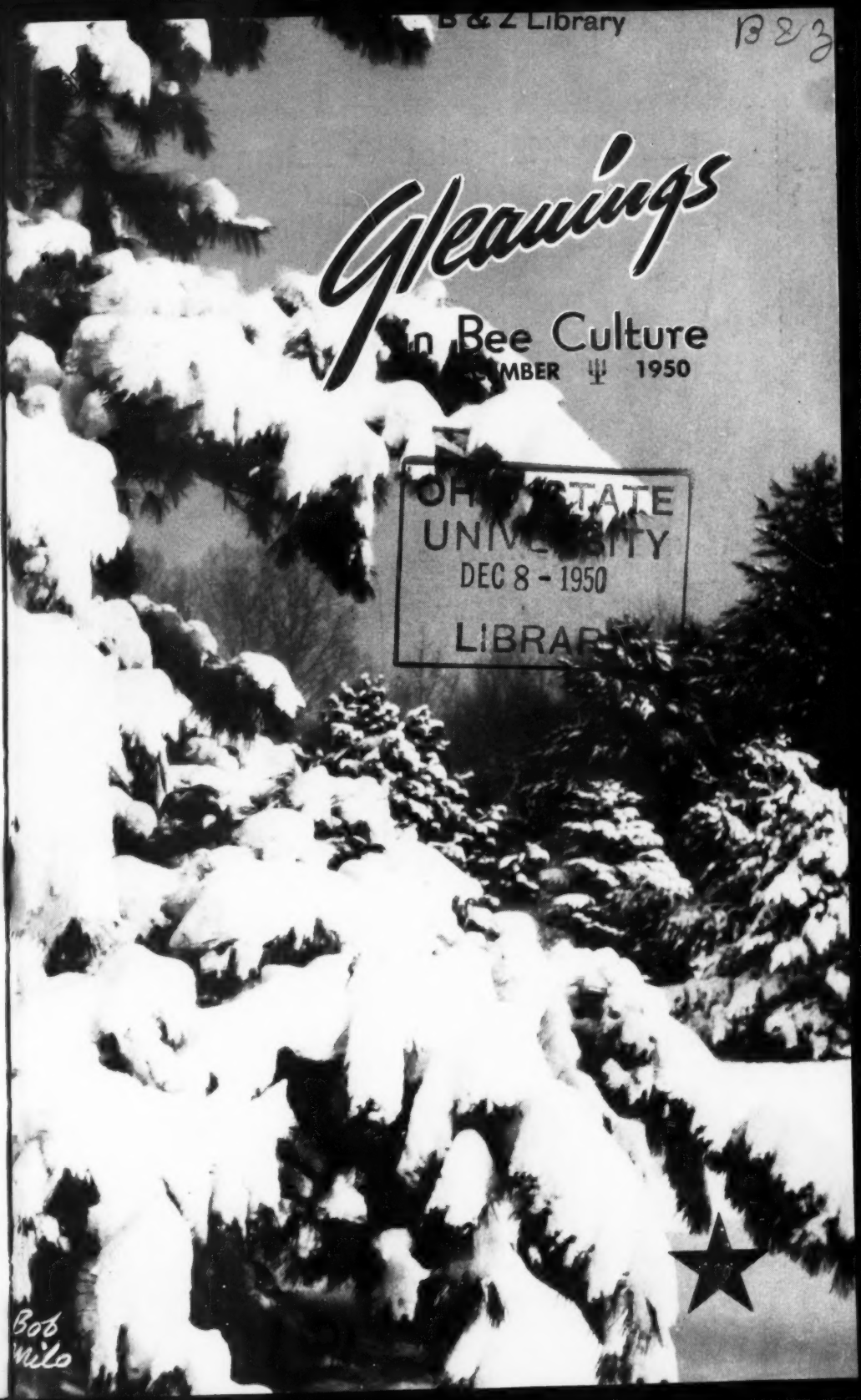

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